

**CHIRURGERY**

*According to the Methode,*

*Practiced*

Written by **PAUL BARBETTE**

**DOCTOR**

*of Physick & Practitioner*

at **AMSTERDAM.**



London Sold by *Moses Pitt* at the  
*White Hart* in *Little Brittain* 1672.



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THE  
Chirurgical and Anatomical  
WORKS

OF  
PAUL BARBETTE, M.D.  
Practitioner at *Amsterdam*.

Composed according to the  
Circulation of the Blood; and  
other new Inventions of the  
Moderns.

Together with a Treatise of the  
*Plague*, Illustrated with Observations.

*Translated out of Low-Dutch into English.*

L O N O N,  
Printed by J. Darby, and sold by Moses Pitt at the  
*White-Hart* in Little-Britain, 1672.

THE  
WORKS

OF  
DR. BARTHELEMY

OF THE

COMPARISON OF THE

OF THE



OF THE

OF THE

OF THE

THE  
AUTHORS PREFACE  
TO THE  
*JUDICIOUS READER.*



What should be the scope  
of putting forth  
this my not sufficient-  
ly Polished Trea-  
tise, after so many  
Excellent and Learned Writings  
of *Physicians*, the Title before will  
declare unto thee, viz. That my  
design was both out of the Anti-  
tient and Modern, to extract the  
very Marrow, and plainly to  
shew the best way of Curing  
Diseases belonging to Chirurgery:  
Therefore I have purposed not to

*To the Judicious Reader.*

obtrude upon thee this or that  
Mans Fancy, or conceit, for Mo-  
dern Practice: For who ever was  
so mad as to imbrace the Opinion  
of any one Region, City, or Man?  
who ever, though most ingenious,  
and judicious, equally excell'd in  
all the parts of his Profession?  
seeing it hath not pleased the Gi-  
ver of all Arts, to grant this per-  
fectness to men: But I resolve to  
set down that Practice, which  
Reason and Experience, after  
a diligent reading of the best Au-  
thors, and an exact observation  
of several Operations, have taught  
me to be the safest, convenientest,  
and easiest, for prolixity I have  
purposely avoided, and used not  
more words than only to express  
the thing it self. Nevertheless I  
have studied to comprehend the  
Foundation of the Art in few  
Chap.



*To the Judicious Reader.*

Chapters. Read over all diligently, and let not what I purposely omitted trouble thee: Great Volumns easily affright the Reader, as those that are too little betrays him: I have carefully endeavoured, what is hardly found, a mean; and therefore I have rather in few words inserted my Observations in the very descriptions of the Diseases, than to waste thy time with a prolix discourse: To this end, that I might not repeat in particular Diseases, what I had once set down in generals.

*Tumors, Wounds, and Ulcers,* which neither in Cause nor Cure differ, I have reduced under one Head, contrary to what most Writers use to do, who only from the difference of the Part and Member affected, difference the Diseases, which afterwards gi-



*To the Judicious Reader.*

ving them new names, they without any benefit multiply, and so they render that Art which is difficult enough of it self, much more difficult. The most diligent of Students can scarce distinguish them, who unprofitably spend much labour, and time in the Controversies of the Ancients concerning the name, whose Opinions they suppose they ought to follow to a tittle, if they will arrive at the degree of Doctor. We are the Ministers of Nature, not the slaves of those Men that describe it: We account neither them Prophets, nor their Writings sacred, neither unlawful to add, or diminish to them, without the name *Heretick*.

I have set down both few, and many Medicaments; for those that I have produced, although  
few

*To the Judicious Reader.*

few in number, yet of great vertue, which by vast pains, and no less charges I have found out, and which daily Practice hath confirmed to me, as the safest of all. Other Medicines seek for amongst others.

Farewel kind Reader, and whil'st I am imployed about other, and better (if I can possible) writings, receive these with a grateful mind; and as I study to be profitable to thee, so also do thou endeavour always by these to help others.

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The

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# Verbetty's Chirurgery.

## The first Part.

### CHAP. I.

#### Of Manual Operations in general.



Although the word *Chirurgery* signifies all *manual Operations* in general; yet, by reason of its pre-eminence above all the rest, it is now onely given to that *Art*, which endeavours to remove the Diseases of the Body, by the assistance of the *Hands*.

'Tis true, that the *External Accidents* do not only require the help of the *Hands*, but also *Internal Means*; and what wonder for a Part to be concerned for the Whole? *Chirurgery* being a Part, which depends upon the Body of *Physick*. But these *Internal Means* we impart to you as *Chirurgions*, not as *Physicians*.

The common Operations of this Art, to which all the particular ones may be reduced, are of four Sorts:

1. *Synbesis*, which teacheth how to unite parts, disjoyned.

D

2. *Diuresis*,

2. *Diæresis*, to separate parts unnaturally joyned.
3. *Excresis*, to remove what is superfluous.
4. *Anaplerosis*, to supply those that are wanting.

## C H A P. II.

## Of Union or Conjunction.

**U**nion is of two sorts; one regards the *Hard* and *Bony*; the other, the *Soft* and *Fleshy* parts of the Body.

The *Union* of *Bones* is again two-fold; the one, setting *Bones* broken; the other, reducing *Bones* wrenched or disjoyned. We begin with *Fractures*.

## C H A P. III.

Of the Nature, Difference, Signs, Prognosticks, and cure of *Fractures* in general.

**A** *Fracture* is a *Solution* of continuity in the hard parts of the Body, caused by an outward hard Instrument forced upon the part.

The *Differences* are taken, 1. From the *Manner*, there being some *Transvers*, which are properly called *Fractures*; others that are made according to the length of the Bone, call'd *Fissures*; and others are *Commotions*, when the Bone is broken



broken into many small parts. 2. From the *Part*, it being sometimes in the Head, sometimes in the Shoulders, Ribs, Arms, Legs, &c. 3. From the *Accidents*; there being sometimes a Wound accompanying it; at other times, a Dislocation, Inflammation, Gangrene, &c.

The *Cause* is, whatever is able to break, bruise, or cut. Sometimes also a Bone corrupted by the Pox, Gout, or otherwise, hath been broken without much external force.

*Signs.*] A Bone being transversly or obliquely broke, you may perceive an inequality; the Patient is scarce able to move the Part affected, and sometimes one part is shorter than the other; and upon such a broken Ankle, Leg, or Foot, the Patient cannot stand at all; but he may somewhat, though with pain, in a Dislocation: And this is the surest difference between a Fracture and a Dislocation. A *Fissure* is discerned by the thickness, pain and unevenness of the Part, and requireth the judgment of a skilful Chirurgion. A *Comminution* is easie to be perceived, the Bone being very unequal, and here and there yeelding to the fingers.

*Prognosticks.*] A *Transvers* Fracture is more easie to cure than an *Oblique*; that, where but one Bone is broken, than where two are, or where the bones are much shattered; that, which is made in the midst of the Bone, than what happens to be near the Head; and a single one, than a compound. If the Patient remain undressed beyond the seventh day, the Member is in danger of mortifying, especially if that the part be too hard bound.

The *Cure.*] A broken Bone requireth four



Manual Operations; *Extension, Conjoyning, Ligature, Well-placing*; and moreover, the application of outward and inward Remedies.

The *Extension* can hardly be performed without pain; which yet will be much less, if the Member to be extended be so placed, that the broken parts do not labour; that is to say, The Part must be so laid, that when *in health* they could hold out longest without tiring. Nor must the *Extension* be more or less than what is necessary; which will be performed aright, if regard be had to the Time of the Fracture, to the Age of the Patient, and to the Size of the Bone. A Recent Fracture, a Tender Patient, a Small Bone, require a gentler extension: an Old Fracture, a Strong Patient, and a Big Bone, a greater. The manner of extending I describe not, because that it is better learnt by the frequent view of Practice, than by Reading.

After *Extension*, you are to *joyn* the Bones together again; in the doing of which, the broken parts must not be wrested, but retain their natural place and figure.

Then the part must be bound with two Rowlers; The *first* is to be rowled thrice about the Fracture, and then upwards. The *second* (which must be twice as long) is to be once wound about the Fracture, proceeding downwards, and last of all upwards again, a little higher than the first Rowler: to which you will give more firmness, if you bind some convenient Splints (of Wood, or rather of Pastboard, or Scaboard) round about the member.

The Ligature ought not to be too strait, lest it cause pain, and rob the part of its nourishment;  
nor

nor too loose, lest the Bones slip out of their place. Further, unless great pain, or other symptoms occasion it, it must not be open'd before the third day: And at the second dressing, it must be bound somewhat closer; and afterwards, changed but once every 4, 5, or 6 dayes.

Lastly, The Part ought to be *well-placed*, that is, softly, evenly, and a little raised. If you lay it too low, the Bone will bend out; if too high, it will bend inwards: Wherefore you must observe a middle way.

Now, whether these four Operations have been duly perform'd, may be known by the ensuing tokens.

The *Extension* is well done, if the part moveth again, and is as long as its fellow; if from without it be every where even, and a little hollow about the Fracture.

The *joyning together* is duly made, if the Bone be any thing firm, and all about the Fracture be found equal.

The *Ligature* is as it ought to be, if the Patient, as soon as he is dressed, find the pain tolerable; if the pain do somewhat increase the first and second night, and there be perceived the third day, without the place of binding, a little swelling, yeelding to your hands.

The Bone is *well-placed*, if in the second dressing you find all even.

Before you rowl the bands about the Member, you will do well to bathe the part with Spirit of Wine, or Red Wine; or, with Oil, Wine and Vinegar mix't together: Or, take the White of an Egg, together with some Bolus, Frankincense, Dragons Blood, &c. or annoint it with Oyl of

Roses, Mirtles, Violets, &c. Or lay Plaisters on it. In Winter the *Oxyroceum* will do well. At all times that which follows :

Take Mastick, Frankincense, of each two drams : Aloes, Gum Tragacanth, Dragons Blood, Bole Armonick, of each a dram : *Lapis Hematitius*, *Ginsj Usti*, of each one dram : whites of Eggs, and Oyl of Roses, as much as is sufficient. Make it into a Playster.

*Compound Fract.*] If a Wound accompany the Fracture, then ought you to extend the part first, (yet somewhat gentler than in a simple Fracture) then you are to joyn the Bones together ; next, to observe the Wound, to bring the Lips thereof together with Plaisters, rather than with a Needle, and to guard it with a Defensive ; and lastly, to dress the part, and to lay it conveniently.

If the Wound be accompanied with a Fracture, and the Bones much shattered, then endeavour with Forceps to take away the small loose Bones, leaving those to Nature that are yet any way fast ; for she will, though somewhat later, of her self throw them out ; if she do not, she will sometimes unite them again to the Whole. Yet, to forward her, you may assist Nature with the following Medicaments.

Take Ashes of Earth-worms, three drams : Virgins Honey, an ounce and half. Mix them, and make an Oyntment.

Or,

Take Aloes, Myrrh, of each half a dram : Roots of Comfrey the great, Round Birthwort, of each three drams : *Euphorbium*, two drams : Turpentine, and Wax, as much as is sufficient, with a little Oyl of Lillies. Make it into an Oyntment.

If

## Of Fractures in general.

If the Bone be *bare*, cover it with its own Skin and Muscles, and defend it from the Air as much as is possible.

If it be *bare* and *started out*, endeavour to reduce it again into its place; but if it be got out too far, take away the pieces thus started out with a File or Nippers.

Now these Manual Operations being well performed, the Patient must observe a good Dyet; open a Vein upon occasion, and temper his Blood. In the Fractures of the lower parts, no purgation is easily allowed of; but if the Patients Belly be bound, he must take a Suppository.

In the Fractures of the upper parts, purging or administering Clysters is oftner necessary, and may be done by the ensuing compounded or single Medicines; which may also serve you in all other Accidents that we may describe in this whole Treatise.

### Medicines purging Choler.

Rhubarb, *Cassia fistula*, yellow Myrobalans, Tamarinds, Manna, Scammony, Syrup of Sicchory with Rhubarb, the Electuaries *Catholicum*, *Hierapicra*, *Lenitivum*, *Disprunum solutivum*, and of the Juyce of Roses, Pills of *Aloes rosata*, *Anrea*, *Aloephangine*, *Russi*.

Take Electuary of Lenitive, two drams; Electuary of the Juyce of Roses, one dram: *Cassia* fresh extracted, two drams: Cream of Tartar, two scruples: Succory Water as much as is sufficient: Spirit of Vitriol, a little. Make it into a Potion.

## Of Praesures in general.

Or,

Take Rhubarb, Senna, of each two drams : Cream of Tartar, one dram : Aniseeds, half a dram : Infuse them two hours in a sufficient quantity of Sorrel Water, let it boyl a little, and to three pounces of the strained Liquor,

Add of the

Elect. of Diaprun. Sol. one dram, or a dram and half.

Or,

Take of *Pilule Aurea*, Extract. *Catharticum*, Rhubarb, of each half a scruple. Make them into seven Pills.

Or,

Take Cream of Tartar, *Sal Prunella*, of each xii grains : Vitriolated Tartar, *Diagredium*, of each vi grains. Make it into a Powder.

### Medicines that purge Phlegm.

The Roots of *Asarum*, Mechoacan white and black, Hellebore, Colocinth, Myrabolani, Belline, Emblici, Chebuli. Agarick, Turbith, Syrup of *Diacarthamum*, Electuaries of *Hiera* with Agarick, *Diaplenicon*, *Diacarthamum*, Confection of Hamech, Powder of Diaturbith, Pills of Cochæ, Fortidæ the greater, Aggregativæ, Lucis the greater, *Assajeret* of Avicenn, Troches of Agarick, Alhandal.

Take Roots of Grass, two drams : Orrise, Troches of Agarick, Turbith, of each one dram : Aniseeds, Fenellseeds, of each one scruple : Let them infuse for three hours in a sufficient quantity of Parsley-water ; boyl it, and strain it, and so three ounces of it,

Add



*Of Froctures in generall*

Add of

**Electuary of Diaphenicon, one dram and half.  
Make it into a Potion.**

Or,

**Take Electuary of *Diacarthamum*, Confection of Hamech, of each two drams : Pouder of Japlo, eight grains : Cream of Tartar, two scruples : Fennel water, as much as sufficeth. Make a Potion.**

Or,

**Take of Pill Auræ, six grains : of Pill Cochæ, Pill Fætidæ the greater, of each twenty grains. Make them into seven Pills, and guild them.**

Or,

**Take Extract of *Catholicum*, xiii grains : Of the Troches of Alhandal, one grain. Make three Pills, and guild them.**

*Medicines purging Melancholy.*

**Roots of black Helchore, Polipody, *Senna*, *Lapis Lazuli*, Syrup of Roses solutive with *Senna*, Electuaries of *Diacatholicum*, Lenitive confection of Hamech, the Pouder of *Diasenna*, Pills of *Lucis minoris*, Troches of Alhandal, Myrobalans of India.**

**Take Bark of Tamarisk, three drams : Roots of Polypody, two drams : *Stæchas* flowers, half a pugil : *Senna*, one dram and half : Aniseeds, half a dram : Mirobalans of India, one dram : Infuse them two hours in a sufficient quantity of Borage-water ; boyl it, and strain it, and to four pounces of the strained liquor,**

**Add**



Add,

An ounce of Syrrup of Roses with Senna, Spirit of Salt, as much as will give it a little acedity.

Or,

Take Electuary of *Diatatholicon*, one dram: The Electuary of *Diaphenicon*, Confection of Hammech, of each a dram and half: Cream of Tartar, two scruples: Pouder of Jalop, six grains: Whey, a sufficient quantity. Make a Potion.

Or,

Take of Pill Indiae, of Agregativæ the greater, of each fifteen grains: *Diagridinum*, three grains: Troches of Alhandal, one grain. Make seven Pills, and gild them.

*Note.* All these Receipts are set down for full-grown Bodies, their quantities being to be lessen'd according to the younger Age and strength of the Patient.

## CHAP. IV.

### Of particular Fractures of Bones.

THE Fractures of the *Skull* are divided into six several kinds; A *Fissure*, *Contusion*, *Fracture*, *Licision*, *Fundure*, and *Contra-fissure*.

A *Fissure* is made by a hard and blunt Instrument, and passeth sometimes through both Tables, sometimes through one only.

A *Contusion* is made, when by a hard and rude Instrument the *Skull* is so hurt, that it appears whole from without, but yet is sever'd from the whole

whole within : Which yet in little Children may be done without a Fracture.

A *Fracture* is made, when a part of the Skull is separated from the whole.

An *Incision* is made by a cutting Instrument ; where sometimes one part of the Bone is raised up and separated as 'twere, but is yet fast to the rest of the Bone ; sometimes a part is quite taken away ; sometimes there remains a mark in the Bone, according to the figure of the Instrument.

A *Puncture* is made by a pungent or thrusting Instrument, and seldom passeth through both Tables.

A *Contra-fissure* is made, when the part struck remaining whole, the opposite part is cleft.

The *Signs* are, swimming of the Head, dimness of the Eyes, Vomiting, bleeding at the Mouth, Nose, and Ears. The Patient grows dumb, and suddenly falls to the ground : whereupon follows Raving, a Fever, Convulsions, Lameness. Any hard thing, as a piece of Wood, a Spoon, &c. being put into his Mouth, he is not at all, or hardly able to bite upon it. Here it must also be carefully inquired, in what manner, and with what Instrument he hath been hurt ? Whether he be young or old, tender or strong, healthy or unhealthy ? Presently after the Fall or Stroke, before the Part swells, you may sometimes feel the Hurt with your fingers ; and if there be a Wound with it, you may either see it, or find it out with a *Probe*.

*Prognosticks.*] The Fractures of the Skull, how fair soever they may look, is never without danger, but more dangerous, when both the Tables are hurt or broken ; and more dangerous yet, if the

*Dura*

*Dura Mater*, and most dangerous of all, if the *Pia Mater* also be hurt. The more Symptoms there are, the less hope of a good event. If the Bone grow black in the beginning, that is a mortal token.

*Cure.*] If the Skin be yet whole, or the Wound not large enough, make a cross Incision, and divide the *Pericranium*. If under it you find a Fissure, put some Ink into it, and bind up the Wound. The second day, or as soon as the bleeding is ceased, scrape the Skull at once, or at several times, until the Ink, with the Fissure, is altogether gone, and the bone grow somewhat bloody, then throw the ensuing Powder upon it.

Take Dragous Blood, burnt Harts-horn, of each one dram and half: Myrrh, half a dram: Frankincense, and Orise Roots, of each a dram. Make  
+ it into a very fine Powder.

If the Fissure pass through both Tables, then are you to make use of Trepanning; as likewise in the *Contra-fissure*, *Fracture*, and *Contusion* of the Skull; or else you will quickly lose your Patient.

The Incision is healed like the Fissure.

In the *Puncture* you must put the Trepan just in the middle, and not on the sides of the place hurt.

If you find a Fracture with a Comminution, then take out all the small loose Bones, committing to Nature those that are yet fast to the *Pericranium*, or cannot be taken away without force. And then if the Fracture be so large, that you can free the Brains from the coagulated or corrupted Blood, or from the pricking Bones, Trepanning will be needless; but if it should happen otherwise,

wife, you must, with great care, apply the Trepan, unless the Patient be strong, and the matter very little.

The manner of Trepanning will be taught below.

2. If the Nose be broken, then what is raised, is to be pressed down; and what is pressed inward, to be raised with a *Spatule*, or other Instrument: afterwards a Pipe or Quill is to be put up, and continually kept there, till the Cure be done, and a Fracture-Plaister is to be laid on without. If the Bone be not corrupted, it will be healed in ten or twelve dayes.

3. A broken *Jaw-bone* is restored by ones fingers used both within and without the Mouth; and if those be too weak, then the Chirurgions-Man is to draw the Head backward, and the Master forward, and so to put it in. It heals in twenty dayes.

4. The *Clavicle* being broken, there must be one to draw the Arm backward, and another to draw the Neck or Shoulder forward; the Chirurgion himself, in the mean time, drawing upwards what was fallen down, and downwards what was raised too high. If a Ball be put into the Arm-pit, and the Elbow be pressed against the Ribs, the Operation will prove more easie. It is cured in twenty four dayes.

5. If the *Shoulder-blade* be broken about the place where it is united to the *Arm*, then is the hurt for the most part incurable. If it break in the *Acromion*, (which may be easily felt) then let the Arm or Shoulder be pull'd down, either with Hands or Ligatures, and in the mean time set in. If it be broken into several pieces, make an Incision

sion and take them out, unless they be yet fast to the *Peri-ostium*; in which case, you must leave Nature to her self, which will either make them unite again, or throw them out. It is healed in forty dayes.

6. The *Sternum*, or Breast-bone, happens either to be broken, and then you'll find an unevenesse, which being touch't, will yeeld to the fingers, and cause some cracking: or, to be pressed in, and then you'll feel a curvature inwards, which will cause pain, a short breath, coughing and spitting blood. To restore the same, lay the Patient on his Back upon a great stone, pressing both his Shoulders downwards; Then press the Ribs backward and forward, until the Bone be reduced again in its right place. This is cured in twenty dayes.

7. A simple-fracture of the *Ribs*, which is without any great Contusion or Inflammation of the neighbouring parts, may be healed in twenty dayes, applying the Fracture-Plaister. If the Ribs stand out, they must with ones hand be pressed in. If they bend inward, let the Patient keep in his breath, and so press the Rib outward, in the mean time assisting him with your hand. If that succeed not, then lay a sticking Plaister upon it, and pull the same off so often, until the Rib return into its place. Cupping-glasses here are hurtful.

8. A single Fracture of the Joynts of the *Back-bone* is easily set again with ones finger, and is made whole in twenty dayes. But if the Marrow of the Back-bone be so hurt or pressed in, that the Arms or Legs of the Patient become lame or senseless, that he cannot retain his Urine, or his Excrements,



crements, then he seldom escapeth death. Yet you are to do your utmost; and if one or more small Bones be altogether loose from the *Peri-ostium*, then make incision and take them out.

9. The same is to be understood of the fracture of the *Os sacrum*, which alone hath this peculiar, that you may put your fingers into the *Anus*, and restore it to its right place.

10. The *Hip-bone* being broken, is to be set as soon as possible may be, and then it will heal in 24 dayes; otherwise you may expect various accidents. But if it be fractured into many pieces, then are you forth-with, in the first dressing, to make an incision; take out the small Splinters, and re-place those that have yet any hold-fast. Yet, by reason of the multitude of the Tendons, Muscles, Veins, Arteries, and Nerves, that are spread over the whole part, such an Incision cannot be made without great danger.

11. If the *upper Bone* of the *Arm* be broken, first bend the Elbow toward the Chest; then apprehend the lower part of that Bone close to the Elbow, pulling it strait down towards the ground, and so restore it; well observing here, that the Arm, during the whole time of cure, must remain in that posture in which it was extended; otherwise the Fracture will, upon the least change of its posture, slip out again. Where yet 'tis to be understood, that the Chirurgion, after the second or third dressing, as often as after that he dresseth the Patient, must stretch out his Arm strait, to the end that the Tendons which run from the Arm, and are inserted below the Elbow, shrinking by the long lying still, may not cause a troublesome stiffness. However, this shrinking of Tendons  
(which

(which are by pretenders to Chirurgery, ridiculously cal'd *Nerves*) may yet conveniently be cured in two or three months, if you make the Patient to carry every day some weight, and endeavour to relax and molifie the Tendons with Fomentations and Embrocations, abstaining from the use of any Brandy, or any other corroborating and astringent Medicines. I have alwayes found succesful the following Unguent :

Take Man's and Ducks Grease, of each one ounce : Oyntment of Marsh-mallows, half an ounce : Oyl of Earth-worms, white Lilly, and Camomile, of each 2 drams. Make an Oyntment:

The broken Bone is cured in forty dayes

The restoring of the broken Thigh-Bone, hath nothing different from this.

12. The *Elbow* hath two Bones, of which the one is called *Radius*, the other *Ulna*. The small *foeile* being broken, 'tis easie to restore it. The Cure is harder when the great one is broken, and yet harder when both are broken ; In which case the extention is to be made the stronger when they be well set and bound up, then must the Hand be placed a little higher upon the Chest than the Elbow ; and afterwards, every second or third day, (yet without pain or violence) the Arm is to be stretched out, to the end that the Humours flowing thither, and there staying too long, may not cause a concretion in the Bones, and a stiffness in the Arm, as not extensible any more. It is cured in thirty dayes.

13. The *Leg* hath also two Bones, the greater called *Tibia*, and the lesser *Fibula*. Their Cure hath nothing different from the next foregoing.

14. If the *Patella*, or Knee-Pan, break cross-ways,

wayes, the Patient commonly remains lame. If it break long-wayes, then by the Muscles that draw upwards, without any great help of the hands, it is almost of it self restored, and cured in twenty dayes.

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## CHAP. V.

*Of the Nature, Difference, Signs, Causes, Prognosticks, and cure of Dislocations in general.*

**D**islocation is a forcing of the Bone out of its cavity and natural place into another, bindering voluntary motion.

The Differences are taken, 1. From the manner; for sometimes the Bone is altogether forced out of its place, and that is properly called *Luxation*: Sometimes 'tis got out but a little, or half, which is called *Sub-luxation*, or *Wrenching*. 2. From the Cause; for sometimes 'tis caused by an External Accident, as by Wrestling, Falls, or Blows, &c. Sometimes from Internal Causes, by the afflux of Humors.

The Causes are of 2 sorts; 1. *External*, Such as are, Falling, Beating, Running, Wrestling, and vehement extention, as it often happens to Women in Labour, through the unskillfulness of Midwives: Yea, by a violent stroke or fall, even the Bones of the Infant in the Womb may be dislocated. 2. *Internal*, by the afflux of Humors, which falling into the Joynts, render the Ligaments soft and lax, and so force the Bones out of their places.

The *Signs*, especially in a Lean Body, are manifest enough. The Bone causeth in the place, to which it is forced, a tumor or rising; and in that, whence it is forced, a cavity. If the Dislocation be total, the Bone will be drawn up, and the Part shorter, (unless it happen by the laxity of the Ligaments that the part grows longer) the part is painful, chiefly upon motion. In *Wrenching*, these Accidents are lesser, and seldom altogether. [*Prognosticks.*] In Children, and other tender Bodies, the bones may be reduced more easily, but are kept in with more difficulty; the contrary happens in lusty and adult Persons: The dislocation of the Head is mortal; that of the *Vertebra's* dangerous, and that which is inveterate, is hard to be cured. That which proceeds from an inward Cause, is of a slower Cure, and does easily return.

*Cure.*] The Bone forced out, must be reduced to its place, either by the Hands, Ligatures, or Instruments: But by which of these three it shall be performed, the nature of the affected Part will declare. 'Tis certain, that these four Manual Operations (*Extention, Setting, Binding, and Well-placing*) must here be used as well as in *Fractions* of Bones.

*Extention* must be made so great, that there may be a cavity between the Bone that remains well, and that which hath been forced away, to the end that in the setting the one may not rub against the other; whence afterwards are wont to rise very grievous, and sometimes incurable Accidents.

In the *Setting*, care must be had not to wrest the Bones nor the Muscles, but to give them their natural

tural position. Before you proceed to *binding* up the Member, endeavour to preserve the Part from inflammation and afflux of Humors, and strengthen it with the following Medicines.

*A strengtbening Plaister.*

Take Frankinsence, Mastick, Bole-armonick, Dragons-Blood, of each half an ounce : fine Flower, an ounce : Roots of great Comfrey, two drams : Weathers Sewet, three ounces : white Wax, as much as sufficeth to make a Plaister.

*Another,*

Take Litharge, Wax, Rosin, of each three ounces : Being melted over the fire, add to them, of great Comfrey, Bean-Meal, Bole-armonick steeped in Vinegar, and dried, of each three ounces : Tragacanth, two ounces. Make it into a Playster.

If the pain, or other Symptoms do not necessarily require it, you ought not to loosen the Bandage before the fifth, sixth, or seventh day, and then do it with as little motion as is possible. Lastly, *Lay* the Part *even*, and in such a posture, in which when sound, it can longest remain without trouble.

If you find the Dislocation accompanied by an Inflammation, beware of extending the part, or doing ought to it before that be removed ; which you are to do, first with Emollient, and afterwards with Discutient Medicines.

*An Emollient Unguent.*

Take the Compound Oyntment of Marsh-mallows,



### *Of particular Dislocations.*

lows, two drams : Hogs-grease, half an ounce : Oyl of white Lillies, Roses, and Mirtles, as much as is sufficient to make it into a Linament.

+

### *A Discutient Plaister.*

Take Colophony, Frankinsence, Mastick, Pitch, of each an ounce : Cummin-seeds, Fennel-seeds, of each six drams : Wax, and Oyl of Dill, as much as sufficeth. Mix them, and make it into a Playster.

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## CHAP. VI.

### *Of particular Dislocations.*

I. **T**HE *Jaw-Bone*, except it be in young Children, can hardly be dislocated otherwise than forwards. Sometimes it is only dislocated in one side, and is easily restored ; sometimes in both, in which case it is difficult to set it, and very dangerous, and often mortal.

It comes seldom to be luxated from a debility of the Muscles ; sometimes from the laxity of the Ligaments ; for the most part, from a too wide opening of the Mouth. If it be dislocated but on one side, it stands a-skew, and is turned towards the side hurt ; some thing is prominent, the Teeth stand not directly under one another, nor can they be brought together, so that the Mouth remains open. You must draw it toward the opposite side, and reduce it to its place, which is not hard to do ; yea, by a stiff box on the Ear it hath often been restored.

If

If it be dislocated on both sides, then does it fall forwards, the Mouth stands open, both the *Apophyses* are prominent, the lower Teeth stand further out than the upper, and the *temporal* Muscles are distended. In this case, let your Servant hold the Patient's Head firm, or hold it against a Wall; draw the Jaw-bone first downward, putting both your Thumbs in the Mouth; then backward, and lastly upward.

2. The *Collar-bone* rarely happens to be luxated, and is seldom set, but it stands somewhat out; whereby it often comes to pass, that the Patient cannot lift up his Hand to his Mouth, much less to his Head. For restoring it, you are to lay the Patient on his Back, and a stone under his Shoulder; then you must draw his Arm forward or backward, according as the dislocation requires, then press the Clavicle, so raised, down into its place.

3. The *Great Bone of the Arm, (Adjutorium)* is never dislocated backward; seldom, or not at all, upwards and forwards, but for the most part downwards. A certain sign of it is, if you find a roundish hardness under the Arm-pits, and on the top of the Shoulder a hollowness, and the Arm be longer, and the Patient cannot bring his Hand to his Mouth. It may be reduced several ways; but these are the most convenient, and the most sure. 1. Let a strong man hold the Patient fast about the hurt Shoulder, and let another draw the Arm downwards; then lift the upper part of the Arm into its Cavity, and the Bone will be restored sooner than you are aware of. 2. Take a strong Ladder, at the Foot thereof put a Stool for the Patient to stand upon; on the up-

permost step, bind some thing round that may just fit the Arm-pits; put the Patients Arm upon it, and draw it downward, moving the shoulder-bone to and fro; let your Servant, mean while, draw the found Arm downward, and withal, thrust away the Stool from under the Patient, that whilst he is thus pendulous, the Shoulder-bone may be restored. 3. Lay the Arm-pits of the Patient upon the highest Shoulder of a strong and taller man than himself; draw the dislocated Arm downward, so he lifting up his own Shoulder, that the Patient may remain in a pendulous posture: In the mean time press his Shoulder downward, working the Arm to and fro, until it be restored to its due place. 4. The *Glossocomium* described by *Hippocrates*, and improved by *Parvus*, is the most convenient of all; to be seen in the Authors themselves.

4. If the *Vertebrae*, or turning Joynts of the Neck be out of joynt, the Patient is to be set upon a little low Stool, and his shoulders pressed downward. After this, his Head is to be lifted up with both hands, turning it to and fro, (yet with as little force as may be) and thus the Bone is to be set. Whereupon the Patient will presently find himself at ease, and turn his head whither he pleaseth.

5. If the *Vertebrae* of the Back be forced *outwards*, the Patient is to be laid upon his Belly, and by two Men and two Ligatures, one tyed under the Arm-pits, the other about the Hips, he must be strongly stretched out, and thus the *Vertebra* be thrust in. If they be forced *inwards*, it is mortal.

6. If the *Os sacrum* be out of joynt, put your fingers

fingers into the *Anus*, and press it from within as well as from without, into its place.

7. A *Rib* dislocated, must not remain long out of its place, lest more grievous Accidents follow. If it be removed out of its *Vertebra* upwards, then hang the Patient by his Arms over a Door, and so press it in. If it be out of joynt downward, the Patient must bend himself, laying his Hands upon his Knees, and the Chirurgion in the mean time, must move to and again the displaced Rib, till it be restored to its right place. If it be dislocated inward, lay a sticking Playster on it, and often pull it away with violence; and thus sometimes it may be restored: if not, it often proveth mortal, not being capable to be replaced by the Hands.

8. The *Elbow* may be dislocated *forward* or *backward*, *inward* or *outward*: And sometimes the smal Focil is put out of joynt, sometimes it remains in its place; which by handling the part, is easily perceived. If it be out *forwards* the Arm thereby becomes shorter, and cannot be bent, the Bone stands out forwards, and behind there is a preternatural hollownes. The forced-out Bone must, as well in this, as in all other kinds of dislocation of the Elbow, be speedily restored; otherwise there will follow grievous Pain, Inflammation, Feaver, Vomiting of Choler, and sometimes Death it self. Let the Arm be extended oblickly, and so far, that one Bone may not hurt the other in the setting. If the Hands be not strong enough, then bend the dislocated Arm about a Pillar or a Bed-post, and by the help of a Bandage extend it, & pressing the Bone backward, until it be replaced. If it be dislocated *backward*, the Arm will then also be shorter, and

cannot be bent, the Bone will stand out behind; and before there is a preternatural cavity. If it be *inward* or *outward*, there are the like signs, only the Tumor will be in the place, to which the Bone hath been forced, whereas the hollownes is there, *whence* it hath been forced. All these *three* dislocations may be easily cured by a convenient extention, if they be not inveterate. The same is to be understood of the *Radius*, when forced out of its place.

9. The *Hip* may be put out of joynt four manner of wayes; mostly *inward*, *outward*, and *forward*, but seldom *backward*. If *inward*, the Leg is longer, and moveth with difficulty; the Knee is turned outward, and the head of the Thigh-bone by the hands may be perceived in the Groin. As difficult as it is put in, so easily may it be put out again, whereby the part affected is wasted, and the Patient lamed. To reduce it to its place, lay the Patient upon the midst of a Bench or Table; between his Legs put a strong stick, wound about with Linnen, and upon it let him stify stretch out his Leg, and the Chirurgion in the mean time with his hands set it. By the *outward* dislocation of the Hip, the Leg grows shorter, and the Foot is turned inwards. The Patient can then indeed bend his Leg, but hardly bring it to the ground. Though it be not set aright, yet the pain vanisheth of it self, and the Patient in time is able to go without Crutches. Lay him on a Bench or Table as above; let the Leg be strongly extended, either with Hands or Bands, and mean while reduce it into its place. If the Hip be forced out *forward*, the Groin is swoln, and the Buttocks fallen, the Leg is neither longer nor shorter, nor  
cannot



cannot be bent but with trouble ; and the Urine is suppressed. Though it be not set aright, yet the Patient in time will be able to go well enough upon it, though sometimes it falls out that he must somewhat trail his Leg after him. To restore it, let the Patient lie on his sound side, and strongly stretch out his Leg ; press it into its former place, and in case the hand be too weak, thrust it in with your Knee. If it be got out *backward*, the Patient can neither stretch out nor bend his Leg, nor is he able to bring his Heel to the ground, and if he should force himself to do so, he would fall backward : the Leg is shorter ; there is a hollowness in the Groins, and if the Buttocks be pressed upwards, you shall find an unusual swelling. Though it be not put in, yet the pain will in time vanish, and then the Leg may be bent again, but it becomes shorter, yet straight, nor is the Foot turned inward nor outward. Lay the Patient on his Belly, and strongly extend his Leg ; mean time apprehend the Thigh-bone above the Knee ; stretch it outward from off the sound Leg, press the Head into its Cavity, in which yet it will not stay, if thenceforth the Patient do not keep himself very quiet.

10. The dislocations of the *Legs* are cured after the same manner as those of the Elbow.

11. If the *Knee-pan* be out of its place, let the Patient stand upright, and press it in again ; lay on the side, whence it hath been forced away, something that's hollow, answerable to the shape of the said *Pan*, and below in the cavity of the Leg, put one or more compressing Rords, bending the whole Leg so stiff, that the Knee cannot be bent.

CHAP.

## C H A P. VII.

## Of Ruptures.

**H**AVING treated of Fractures and Dislocations of the Bones, we shall now speak of *soft* and *fleshy* parts, and of the *re-union* of the same; beginning with the burst *Peritonæum*, which sometimes gives way to the Intestines, at other times to the Cawl, & not seldom to both, to get out of their natural place into the Groins, or the *Scrotum*, there causing a Rupture, called *Euterocele*, or *Hernia Intestinalis*; if the Bowels come out, an *Epiplocele*; or *Hernia Omentalis*, if the *Omentum* or Cawl be out.

The *Peritonæum* is made up of two strong but soft Membranes, which do so contain whatsoever is included in the Belly, or lowest Cavity, that when sound, nothing can fall out. In Women, the *Os pubis* is its utmost limit: In Men, its outermost Membrane reaches further, and constitutes the first proper Coat of the Testicles. In the Groins, it comprehends the Seminal Vessels as in a Sheath, called *Processus*, or *Productio Peritonæi*. This being stretched, or enlarged, or coming to burst, is the proximate cause to the lately mentioned Ruptures. The Groins therefore are the usual places of Ruptures: But do not therefore imagine, that the *Peritonæum* cannot be distended or burst in other places, and therein to cause a Rupture. It comes also sometimes to pass *above* the Navil, yet seldom: *Beneath*, and *on the side* of the Navil, far above the Groins, I have not only  
seen

seen it often with many others, but seen it ordered and dressed just like an Abscess, the Chirurgion giving no other reason for his mistake, than that it was not the place of Ruptures: Which those that love the Art, and their own Honour, may take notice of. +

Most times the *Ileon* falls down, yet sometimes the other Guts come out with it, and fall into the *Scrotum*; which cannot come to pass by a simple distention of the *process* above-said, but it must necessarily burst in all such great Ruptures.

The *Causes* which make the *Peritonæum* to burst or to dilate, are, Falling, Leaping, Beating, bearing of heavy Burdens, strong Vomiting or Coughing, Obstipation of the Belly, Winds pent in, and all vehement motions of the Body. +

*Signs.*] The Tumor is sometimes bigger, sometimes lesser, sometimes vanish, but with the least motion returning. Though the Cawl or Intestines should be fallen down never so much, they may easily, without any pain be thrust in again, unless Wind or Excrement hinder it, in which case the Rupture is very painful.

If the Intestines be full of Wind, the whole Belly is tense; you may hear a noise, and the Patient breaks Wind upwards and downwards. If the Excrements be grown hard, the Patient goes with difficulty to Stool, and the swelling, weight, and hardness little by little increaseth. If the *Peritonæum* be only relaxed and widened, than the Tumor from little becomes bigger by degrees, but if it be broken, it appears suddenly.

*Prognosticks.*] In little Children, Ruptures are easily cured; in aged People, slowly or not at all, especially if the *Peritonæum* be burst. If the Intestines

stines be filled with Wind or Excrements, there follows pain, and if that be not suddenly removed, an Inflammation, Gangrene, and Death.

*Cure.*] Lay the Patient on his Back, with his Legs on high, and a little asunder, then it often comes to pass, that the Cawl, or the Intestines return of themselves into their former place: But that not happening, press them in gently with your fingers. And if you cannot effect this, by reason of Wind or hardned Excrements, then use the following Medicines.

*Where the Excrements are indurated:*

Take Roots of Marsh-mallows, two ounces: Of white Lillies, one ounce: Leaves of Mal-lows, Violets, Pellitory of the Wall, of each half a handful: Flowers of Camomile and Melilots, of each two pugils: Bran, half a handful: Boyl them in Water, and to the Liquor,

*Add of*

Barly and Bean-meal, of each three ounces: Lin-seed and Fenugrick, of each two ounces: Oyl of Roses, and white Lillies, Ducks Fat, and Hens Fat, of each an ounce. Make it into a Cataplasm.

In case this Cataplasm be not sufficient, or seems not to be so, then bathe the Patient two or three hours in Oyl, sweet Milk, or Water, wherein E-mollients have been boyled, not forgetting in the mean time Clysters and Purges.

*Against Wind.*

Take Oyl of Camomile, Rue, of each one ounce:  
Oyl

Oyl of Nard and Dill, of each three drams : Spirit of Wine, two drams : A little Wax : Make it into an Oyntment.

*Another :*

Take Oyl of Wormwood, one ounce : Oyl of Nard and Nutmeg exprest, of each half an ounce : Oyl of Mace and Carraways distilled, of each one dram : Malmsey, an ounce and half : Boyl it a little, then add to it as much Wax as is sufficient to make it into an Oyntment.

Inwardly use the Seeds of Anis, Fenel, Carraways, and other Medicines dispelling Wind, which also are to be mixt in the peculiar Clysters requisite to this purpose.

Also the Cumin-Playster, used by some, may here do good service.

*Or,*

Take the Styptick Playster of *Crollins*, Gum-Carrauna, Tacamahac, of each half an ounce : *Ol. Philosophorum*, and Carraways distilled, of each an ounce : Make it into a Playster.

These lets, being thus removed, and the Cawl or Intestines reduced to their place, you must then with convenient Bands or Trusses so long keep them in, until the burst *Peritonæum* be so firmly grown, either together again, or to the Muscles of the Belly, that nothing can fall out of it any more. And this you will the sooner obtain, if you outwardly lay on it the following Playster, and inwardly assist Nature with appropriated Medicines. But here remember, that in old Ruptures, and aged People, the edges of the burst *Peritonæum* are sometimes Callons, that how fitly soever they are brought together, yet they can never grow together ; and in that case Bands must do



do the best : But in young Children they easily grow together ; and here Trusses are better than the best Bands : those that are not acquainted with them, must consult those that are.

*A Plaister for a Rupture.*

Take Roots of the great Comfrey, Bistort, of each an ounce and half : Round Birthwort, two drams : Galls, Cypress Nuts, Pomegranate Rinds, of each one dram and half : Flowers of Balaustians, red Roses, Oak Leaves, of each half a dram : Aloes, Dragons Blood, Acacia, Earth-worms dried, Frankinsence, Mastick, Myrrh, Sarcocols, Mummy, of each one dram : Pitch, Colophony, *Gypsiusti*, of each two drams : Lytharge, Bole Armonick, *Lap. Hematidis*, prepared Steel, of each one scruple : Venice Turpentine, as much as is sufficient to make a Playster.

*An Apozem, that the Patient may take five ounces two or three times a day.*

Take Osmund Royal, Rupture-wort, of each one handful : Roots of the great Comfrey, Bistort, of each one ounce and half : St. Johns-wort Flowers, one handful : Aniseeds, two drams : Boyl them in Red Wine, and to pint a and half of the strained Liquor,

*Add*

Of the Syrup of Comfrey of *Fernelius*, two ounces : Make it an Apozem.

*Pills*

*Pills that the Patient may take five or six mornings and evenings.*

Take Mummy, one dram : Galbanum dissolv'd in Vinegar, two drams : Myrrh, Filings of Steel, dryed Hares Dung, of each half a dram : Pouder of Earth-worms, two scruples : Make them into Pills about the bigness of a great Pease. +

If through the Wound, the Cawl or Intestins come out, you are to endeavour to put them in again, before they loose their natural warmth or colour by the Air, otherwise there will remain but small hopes of recovery.

If the Intestins be wounded, then with a waxed Thread stitch the Lips together, and with a gentle hand return it into the Body, as also the *Omentum* slippt out, unless it should have lost its natural colour and warmth ; in which case you must bind it in the place where it is found, cutting off the part that is putrid, and reduce it into the Belly, leaving the Thread hanging out of the Wound, that after suppuration, it may be conveniently fetcht out.

And then you must stitch together, the Wound of the Belly and the *Peritoneum*, which is to be done after this manner : Take a Needle, thred it with a waxen Thred, thrust it from without through the Skin and Muscles unto the very *Peritoneum* ; leaving it on this side untouch't, but lay hold on it on the other side ; pierce it through, and the Muscles and the Skin also, drawing the Lips together : then passing over the space of an inch, thrust in the Needle on the same side again, on which you drew it out last, through the Skin and Muscles,

Muscles, leaving again the *Peritoneum* on the same side untouch't, but holding it on the other side, thrust it through together with the Skin and Muscles, and so pursue the Wound unto the end. Then, forasmuch as by reason of the continual motion of the Belly, your stitches may easily be undone, the rather because the haste, sometimes here to be used, will not always permit to make them with exactness, it is ever to be esteemed necessary, to apply yet to the Wound a sticking-Playster.

Among these Ruptures is to be reckoned the *Navil-Rupture*, (by the Learned called *Exomphalos*, or *Hernia Umbilicalis*) which proceeds from the same cause, and is cured by the same means: Only you are here to observe, that upon the Plaster, you must put Boulsters of Leather, or other hard things, and this according to the bigness of the Rupture, that by this means it may be sufficiently and perfectly kept in.

Here it may be noted, that the *Peritoneum* seldom bursts: I have divers times found and shewed in dissected Bodies, that the Navil, together with the Intestine following, stood out bigger than a Man's Head, insomuch that the right Muscles of the Belly were pressed side-ward, and severed from one another; and yet was the *Peritoneum* but stretched, and no where burst.

These are the Simple and Compound Ruptures, that are commonly described; but *Practice* shews us many others, not mentioned by Writers. For, *Experience* hath taught me, that the *Peritoneum* may burst behind toward the Back, and there cause a Rupture. We also find, that the *Proceſſus Peritonæi* near to the Groins, may come  
fo

so to be lacerated, that the Bowels press not into the *Scrotum*, but between the Skin and Muscles falls down toward the Thigh. Besides, we have more than once found, that the *Vas deferens* was fallen twisted into the *Scrotum*, and had there made a Rupture; which happening, it may with the Hands be easily reduced, yea, goes in of it self by lying backward, without any further inconvenience.

You will do well to contrive such Bands, that may reduce the parts fallen out into their right place, but in no wise to prejudice the sound ones.

Among these Ruptures, are commonly reckoned divers *Swellings*, that belong to other Chapters, where also we intend to describe them. But to comply with young Students, I shall here enumerate those, that in the Modern Practice do occur; Namely,

1. *Enterocoele, Hernia Intestinalis*, or the Gut-Rupture.
2. *Epiplocoele, Hernia Omentalis*, or the Cawl-Rupture.
3. *Omphalocoele, Hernia Umbilicalis*, or the Navil-Rupture.
4. *Pneumato-coele, Hernia Ventosa*, or the Wind-Rupture.
5. *Hydro-coele, Hernia Aquosa*, Water-Rupture.
6. *Bubonocoele*, Swelling of the Glands in the Groin.
7. *Cirrococoele*, a swelling of the Seminal Vessels in the *Scrotum*.
8. *Hernia Veneris*, an hardening of the Testicles by an impure *Concubitus*.
9. *Hernia Humoralis*, a Repletion of the Testicles with unnatural Humors.

10. *Hernia Carnosa*, a fleshy Rupture.
11. *Broncho-cele*, *Hernia Gutturis*, a swelling in the Throat.
12. *Spermato-cele*, figuratively so called by me, when the *Vas deferens* falls twisted into the *Scrotum*.

## C H A P. VIII.

## Of the falling down of the Matrix.

THE *Matrix* does not easily fall down by Relaxation, much less by Laceration of her broad Ligaments, as most Writers imagine; By hard Labour of traveling Women, or by an indiscreet drawing away of the *Secundines*: Others as well as we our selves have seen, that the bottom of the *Matrix* hath appeared quite turned in *pu-dendis*, so that the inside was become the outside. We have also found (especially in those that were subject to *obstipation*, or belly-ach) that the Membranes of the *Fudenda* were so far stretch't out, that the Unskilful have taken them for the *Matrix* it self, and do so still.

To Cure this Accident, Lay the Patient on her Back, with the Knees on high, and the Legs asunder; then take a Wax-Candle of a competent thickness, mix therewith some *Castoreum*, or *Assa-Fetida*, and with it, gently press the Womb inward, and having fastned the Candle with a Bandage, apply outwardly to the Belly the *Emplastrum Barbarum*, or the following:

Take the Roots of Cyprus, Bistort, of each a dram;



dram : Galls, Acacia, of each half a dram : Cypress-Nuts, Date-Stones, Myrtle-Berries, of each one dram : Pitch and Colophony, as much as sufficeth to make it into a Playster.

Then presently enjoin the Patient to lie still, with the Legs cross, and to beware of speaking aloud, of chiding, and of what-ever may occasion coughing or sneezing.

Here great care is to be had, that your Wax-Candle be not too thick, to the end that by its continual friction it may not cause *Fluorem Album*, whereby the strength of the Body would certainly come to decay. Yet because even by the greatest care and circumspection, this inconvenience will hardly be altogether or always prevented, therefore those do very well, and discreetly, that long-ways perforate the Candle, and thereby give a convenient passage for the humors flowing that way.

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C H A P. IX.

*Of the falling down of the Anus.*

IF the Gut be sunk down, anoint it with Rose and Myrtle-Oyl, mixing a little Pouder of Galls amongst it, and with your Fingers, and a small Linnen-Rag, put it in. If an inflammation hinder the reducing it, then bathe the *Anus* with these Medicines.

Take Flowers of Elder, Camomile, and St. Johns-wort, of each half a handful : Red-Roses two pugils : The tops of Wormwood and Mel-

lilot, of each half a handful : Boyl them in Milk and Red-Wine, and bathe the part.

Here especially care is to be had, that no external cold may come to the fallen-out *Anus* ; for then you may sooner than you are aware of, be surprized with a Gangrene. Wherefore do your utmost to put it in again with speed, and in the mean time endeavour, with the above-prescribed bathing and warm Linnen-Rags, to preserve its natural heat.

There is yet another, though in appearance ridiculous, yet in reality a good way of reducing the *Gut*. With a strong hand strike five or six times the Patients Buttocks, and thereby the Muscles, called *Ani levatores*, will presently draw the *Anus* into its right place again. But before the Patient is thus to be chastized, take care that the *Gut* may first be anointed with Oyl of Roses, or of Myrtle.

## CHAP. X.

*Of the second Operation, called Diarefis, or the separation of what was united together.*

**H**itherto we have joyned together again what had been dis-joyned ; now it follows, that we sever what is united, and treat of the *second* Manual Operation, called *Diarefis*, which is to teach us the manner of *Cutting* and *Burning*, and that both in the *hard* and *soft* parts of the Body.

In the *soft*, the Cutting is called *Incision*. In the *hard*, it is performed four manner of wayes :

By

By *Terebration* or *Perforation*; by *Rasion*, or *Scraping*; by *Limation*, or *Filing*; by *Serration*, or *Sawing*. The *Burning* is donee either by an *Iron*, (which is the *Actual* Cautery) or by *Medicaments*, (called the *Potential* Cautery) as shall be declared particularly hereafter.

## C H A P. XI.

## Of Opening a Vein.

**B**leeding (one of the greatest Remedies in the Art of Physick) is sometimes highly necessary, but sometimes so dangerous, that it ought not to be used without very urgent Causes. Here therefore I think it will be better somewhat to digress for fuller information, than to leave the unskilful in their error.

The *Blood* is the darling of Nature, by whose assistance she performeth all her Operations, and which can hardly be withdrawn from her without damage; yet does Art require, that those who meddle with it, being neither venturous nor timorous, but discreet and courageous, and making out of necessity a vertue, do sometimes proceed to the opening a Vein; yet for no other than these four following causes.

1. In a *Plethora*, or super-abundance of blood, that by this means Nature may be eased of her too heavy burthen, and the innate heat preserved from suffocation.

2. For *Revulsion*-sake, when the blood and the therein mingled humors, by flowing too plentifully

tifully to this or that part, hinder the Cure: Here you are alwayes to cause a Vein of the opposite side, and that sometimes a far distant, sometimes a nearer one.

3. For the *derivation*, or conveyance of the Blood, (which is already got into the part, but is not yet altogether settled there; nor extravasated) into another place; in which case a Vein is to be opened the nearest to the part.

4. For *Refrigeration*, when the heat of the blood is so excessive, that it cannot be allayed by cooling Medicines, or not time enough.

These limits are too narrow for some, who will needs take into those a *fifth* cause, which they make the *Corruption* of the Blood, held by them to be as great an inducement for bleeding as any of the *four* by us recited; to the end, *say they*, that Nature being rid of part of what is corrupt, may be the better able to correct what remains.

But I much wish; 1. That they could make this discharge without the loss of that strength which is so highly necessary. 2. That they would be present when their Patient is to bleed, and precisely tell to what degree of corruption his blood is come, that so the Chirurgion may know how much of it he is to take, and how often; forasmuch as they will not allow, that bleeding is good in all sorts of the Blood's corruption, but in that only which is not gone considerably far. 3. That they would declare, why they will have cured the greater corruption by Purging, and the lesser by bleeding, since that they give to the one as well as to the other, (and that duely) the name of *Cachochymia*. Let them shew, that things differing onely *secundum magis & minus*, do differ in *specie*,

*specie*, and so require specifically different Remedies.

Others proceed yet further, and shed innocent Blood in all sorts of Fevers, without any consideration of spots of the Plague, or of Poyson it self, thus freeing themselves from a great deal of trouble, otherwise caused to the Phylitian from the variety of Fevers. For, since it is the nature of all Poyson, and Malignant Humors, continually to assault the Heart, and suddenly to prostrate the strength of the strongest Persons; and since Bleeding does also *both* the same, not onely diminishing strength, but also drawing the malignity toward the Heart, and driving in again, for the oppression of Nature, what she had thrown out for her relief: I do intreat, and warn all the Practisers of our Art, That as they love the quiet of their Mind, and the good of their Patients, they would beware of Bleeding in Pestilential and other malignant Fevers, as also in all cases that may befall People by Poyson, either inward or outward.

The *French, Italians, Spaniards, and Portugueses* (great Blood-letters) will, I expect, tell me, that Nature, when by bleeding she hath vent, and is somewhat discharged, shall be better able to throw out the remaining evil. And this seems to be true, for the blood indeed gets vent for the spirits to fly away, and a discharge of the strength, which it might very well bear; whereupon Nature knows how to cast out the life of the Patient, and to extort Tears from the By-standers.

Without alleadging any more Reasons, they will ground themselves upon Experience. And it were to be wished they had that ground indeed, and that on the contrary such Patients of theirs,



instead of finding themselves better next morning, even after but the letting of five or six ounces of Blood, were not found cold and stiff at night. Whence it may easily be collected, what it is they call *Experience*; viz. If the patient be perchance recovered, than *Bleeding* must have the honour of it; but if the sick do generally die, than the malignity of the Disease must be blamed. Wherefore I alledge Experience against Experience, and praise God Almighty, that he hath vouchsafed to furnish all those, who without envy, passion, or slavish dependance upon others, will duly consider Diseases with surer means.

To qualifie the matter, some of them would have *bleeding* only administred in the beginning of the Disease, and before the Malignity appears outwardly. This I shall willingly allow them; 1. In very hot Countreys. 2. In a plethorick Body. 3. If the humors flying to the head, cause any grievous symptoms there; in which case, bleeding in the Hand or Foot may be, I think, very beneficial. Otherwise those that use it in all Bodies, and without distinction in these cold and moist parts, will find the ill effects of it, and be puzzled withall to give a reason for their Practice, allowable by Art; the rather, because, by their own confession, they dare not use this their Darling of Bleeding at certain times, but find themselves best in the use of Sudorificks, and cooling Drinks. But enough of this.

Now how *many ounces* of Blood ought to be taken at once; the degree of the Disease, and the Patients, more or less strength, will indicate. And 'tis better, too little than too much. I have never taken more from the strongest and most pletonick Person

Person under my cure than twelve ounces at once; chusing rather, in case of need, to let out twenty ounces at two times, than fifteen at once; of which method I have found good success. +

As to the *season* of the year, and the *hour* of the day, little regard needs to be had in those Diseases, wherein bleeding cannot be long deferred without danger, as in Pleuresies, Squinancy's, &c. Otherwise, the Spring and Autumn, and the Morning are best.

The Veins that are wont commonly to be opened, are these. In the Fore-head, the *Vena Frontalis*; in the Temples, the *Vena Temporalis*; in the Mouth, the *Vena Sub-lingualis*, or *Ramularis*; in the Neck, the *Jugularis Externa*; in the Arm, the *Basilica*, under which lyeth an Artery; the *Mediana*, under which lyeth a Nerve, and under both of them a Tendon; and the *Cephalica*, which hath under or near it, neither Artery, Nerve, nor Tendon, and therefore may safely be opened: This last hath but one small branch that runs outward to the Head, whence it hath got the name of the *Head-Vein*. Without this consideration, it little matters which of these three be opened, in regard that about the Arm-pits they all acknowledge no more but one Branch. In the Hand, between the little Finger and its Neighbour, the *Salvarella*; in the Foot, the *Saphena* and *Ischiatica*.

The manner of bleeding is so well known, that I think it needless here to describe it: Onely I could wish, that some of those that let blood, would take care somewhat better to guess of the number of ounces of Blood they take from their Patients, that so we might not find 12, 16, 18, yea 22 ounces drawn away instead of 6 or 8, that were

were prescribed. To prevent so intolerable a mistake, I would advise, that small Porringers of Tin or Copper were made, in which the number of ounces were marked; though expert Masters do not at all need them, as knowing that Blood is really weightier than it outwardly seems.

## CHAP. XII.

### *Of the opening of Abscesses or Impossbumes.*

THE Humors here and there gathered, do often cause a swelling, which Nature is not always able to dissipate, unless Art do succor her by fit means, which if fruitless, you must use suppuration, and then stay till she of her self make an opening, except there be a necessity to hasten one, or even not to stay for a perfect suppuration: As, 1. when the matter being very sharp or malign, upon which happens a corrosion of the neighbouring parts, and a corruption of the Bones, Tendons, or Nerves. 2. When it may affect a nobler part. 3. When it lyeth in the Joynts. 4. When it is cast out by a *Crisis*.

Before you proceed to the Opening, you are to consider, whether the matter be contained *in its own proper Tunicle*, or whether it be without any *Tunicle*. If *without* any, then make your apertion with a Right Line, observing the Fibres of the Muscles. *For Example*; In the Head, according to the position of the Hair long-ways; in the Eye-lids transverse, in the Temples, the Nose, Neck, Breast, Back, Arms, Feet, Joynts, long-ways;

ways; in the midst of the Abdomen, let it be long-ways, in the sides of it somewhat oblique; in the Groins tranverse; but not very deep, by reason of the subjacent seminary Vessels. Generally beware of touching any great Vein, Artery, or Nerve, for here it's better to cut the Fibres across, lest from a lesser evil there should arise a greater.

The properest place for the opening, is the most raised and softest part of the Abscess, if possible in the depending, that so the purulent matter may the more conveniently be discharged: To which end also you are with a Tent so long to keep open the wound, until the part, being altogether cleansed of its preternatural, Humors may return to its former Functions.

In the opening, thrust not in the Launcet too deep, nor further into the Cavity than to the matter, and as soon as you perceive *that*, draw it a little back, turn the point upward, and then make your opening thorow the Skin as big as may afford the contained matter a free vent.

If the Abscess be included in a Bag, then if it be small, make the incision long-ways; if big, then make a double incision, that is, cross-ways; and beware of touching the Vesicle, otherwise you must expect a foetid and almost incurable ulceration. This being well done, press out with your Fingers the Vesicle, which seldom or never sticks to the Skin, and easily follows; cut off the little Artery by which it is fed; and have a care, that not the least Particle of the Bag may remain on it, lest it gather again.

Forasmuch as in this operation I find, that Chirurgions differ in the Instrument they ought to use,

use, some chusing the *Lancet*, others the *Potential Caustery*, and extol it far above the former: I think my self obliged to declare here what I judge of this matter.

The *Potential Caustery* hath this advantage, that it does not terrifie timorous Patients, nor is painful to the Tender; especially joyning with it the present and known good Remedies: For *quenched Lime* mixed with *Holland Soap*, worketh deep enough into the flesh, but yet much gentlier than the Corrosive of *Ambr. Pareus*. But it hath these inconveniences:

1. That, according to the tenderness or strength of the Skin or Bodics, sometimes it eats in deeper than needs: For we have found by Experience, that in some it hath eaten through the Skin and Muscles to the very cavity of the Belly; in others, irrecoverably wounded the procceses of the *Peritoneum*, together with the seminal Vessels therein.

2. Commonly it spreads it self in length and breadth somewhat further than you would have it, especially if it be to be applyed under the Armpits, in the Groin, or in the Joynts; for it no sooner grows warm, but it melts, and so spreads abroad, notwithstanding the Playster with which the Surgeon designed to bound it.

3. There are necessarily required some hours (in some bodies more, in others less) before it can perform its operation; and this the Humor will not alwayes bear, especially if it be malign.

4. And the Scar falls not presently off, and if you would give a present vent to the Humors, you will be obliged still to make use of a *Lancet*. Be as circumspect as you can, I am sure, you will hardly avoid these inconveniences.



On the other hand, the *Lancet* hath this trouble, that many people are afrighted at it, and that it's painful. But the fear may be prevented by silence, and the pain is little considerable: Mean time you have these advantages:

1. That with the *Lancet* the Apertion may be made as long and as deep as the Chirurgion desireth.

2. The Matter is suddenly discharged, and the Patient hath present relief.

3. The unconcocted remainder may be the sooner concocted, by assisting Nature with convenient Remedies, both inwardly, and outwardly.

4. You will not be troubled with a long gleet, which if it happens, the fault is assuredly in the Chirurgion. For almost all Tumors that appear behind the Ears, in the Neck, under the Armpits, or in the Groin, spring from indurated Glandules, repleet with a preternatural Humor, these Glandules are all included in their own Membranes; these Membranes being touched, either with a *Lancet*, or with Corrosive Medicines, there must needs follow such a flux, (for 'tis impossible that the Glandule should be able to preserve it self, or the contained Humor, its Tunicle being lacerated) which will last until the whole Glandule and Tunicle are both consumed.

## CHAP. XIII.

*Of the Separation of Parts unnaturally joyned.*

THE Membrane of the is Ear thin, but strong, called the *Drum*. This being overgrown with another preternatural Membrane, or a Caruncle, the Patient loseth his hearing, and this is not at all to be cured by any Manual Art, and difficultly by Medicines. But if the Cavity of the Ear, come to be closed up with a Membrane, and thereby the Hearing lost, then is it to be opened with a fit Instrument, and, as soon as may be, cicatrized.

That many have been born with the *Anus* imperforated, and the Intestine covered with a Membrane, hath been often observed: which if the Membrane be tender and thin, is to be opened with the Fingers; if thick, with a Lancet, long-ways, and afterwards kept open with a small leaden Pipe, and drying Medicines.

The *Pudenda Virginum* are sometimes also closed with a preternatural Membrane, which causeth most grievous Accidents, when they are grown marriageable. Sometimes the part is altogether grown together; sometimes upon an ill-treated Ulceration, *Coalescunt labia & membrum illud ineptum reddunt congressui virili*. Sometimes a preternatural Caruncle shuts *Os Vulvae*. The two first are to be opened long-ways with a sharp Instrument, in part wound about with linnen Rags, and

and then cured according to Art. To the last, which causeth most difficulty, you'll need in the Operation a *Speculum Matricis*; and in the latter-end of the Cure a small Pipe, perforated throughout in length, to promote the Cicatrizing. +

Here we shall take leave to write something of the *Tongue*, not of a long and sharp one, for which I have found either none or no better Remedy, than not-medling, patience and compassion; but of those, that being short and tyed, deprive little Children, first of sucking, afterwards of speaking: Which is easily remedied, by loosening the String of the Tongue, by cutting it transverse with a pair of Scissars, and anointing it afterwards with Honey of Roses three or four times a day. In the cutting, the neighbouring parts and veins must be carefully shunned; and sometimes the Nerve of the sixth pair or its Branches run so near the String, that by a deep incision they may be easily hurt, and the Patient fall into sad Accidents. Here let the Chirurgion know, that of an hundred Children, scarce one needs this Manual Operation; and that those Midwives are as rash as ignorant, who in all newborn Babes, do forthwith dilacerate this String, whereby the sound parts being hurt, they are often deprived of their necessary sucking, and by subsequent symptoms, of their life.

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## CHAP. XIV.

### Of the Paracentesis.

\* **A**Lthough the word *Paracentesis*, signifies all Punctures, yet custom hath appropriated it solely to the opening of the Belly in a *Dropfie*, and to that of the Breast in an *Empyema*, though more to *that* than to *this*.

This Manual Operation is antient, full of danger; yet sometimes succeeds well. Nature and success have embolden'd us, now and then to make use of it; but Experience hath taught us, that the greatest difficulty consists herein: 1. That the parts debilitated, and deserted of their natural heat, do easily, after opening, mortifie. 2. That together with the Water issues out likewise the Spirits. 3. That the pressing Water can hardly be so kept in, but it will run out in despite of the Chirurgeon; and if, the better to close the Wound, you do forcibly press in the Pipe, a Gangrene soon and easily ensueth.

Who therefore expects a good issue of this Operation, must use it only upon a Body that is not emaciated or wasted; in a *Dropfie* that is recent, (or at least, when the Tumor in a short time hath risen to a great bulk) and which upon the use of proper Remedies would not presently be removed; in such Patients that are not molested with a Fever, or with difficulty of breathing, and when the parts are yet uncorrupted; and in persons of a middle age, since in Children, and in old people, it is unsuccessful.

As

As to the *Place*; if the Navil stands out, seek for no other place, but make your opening therein: But if that be much drawn in, (as it commonly happens to be in *Hydropical Persons*) it is not proper for it: In which case you must take for your place three inches beneath the Navil, not in the white Line, which, to my wonder, I find proposed by some; but, on the side of the *right Muscle*, in the Muscle called *Oblique Descendens*; Mark it first with Ink, and then make a small apertion through the Skin, Muscles, and *Peritonæum*, taking great care that the *Omentum*, or Guts, be not wounded; which also, by reason of the interposing Water, cannot easily be hurt. He that will be very careful of the opening, must make it according to the *Ductus* of the *Fibres*, a little obliquely downwards (according to this shape \) in the left side, and (according to this /) in the right side.

As soon as you perceive Water to come forth, take a Golden, Silver, or leaden small Pipe, that is, 1. Smooth. 2. Furnish't at the head with a Button or Wings. 3. Perforated on the sides with three or four holes. 4. No longer than the thickness of the dissected part, that is, an inch broad. 5. Somewhat crooked at the end. 6. Exactly fitting the size of the Orifice. Put this into the Apertion, lay over it a sticking Plaister, (others take a Sponge, or a four-double linnen Rag) bind up the Patient, and let him rest two or three hours; than open the Bandage again, and take away one, two, three, seldom or never more pounds of Water, and so repeating it once or twice a day, till the water be *almost* all discharged. You must not take away all at first, for the chilness of



the parts following so great an Evacuation very often causeth death. The Pipe is not to be taken out, but must remain all the time of the cure in the Wound, which you must at length heal up according to Art.

For the opening of an Hydropical Belly, this is the safest, and hitherto practised way, that is left us by the Antients: But the industry of their Posterity hath invented for us a much convenienter Instrument, whereby we not onely do avoid many of the above-mentioned difficulties, but also with less trouble preserve the lives of otherwise incurable Patients; freeing them from stretching, pain, and trouble, according to our pleasure, or the degree of their strength.

This never enough commended *Instrument* was first of all, brought out of *Italy*, by the Experienced Chirurgion of this City, Master *Jacob Block*, and by him put into Practice, to the great benefit of many Patients.

Commonly he chuseth the place lately pointed out by us, *viz.* about three inches below the Navel, and perforates the Skin, Muscles, and *Peritoneum* unto the very Water, taking away no more at once than a quart.

That done, he draws out his Instrument again, puts nothing upon the made hole but dry Lint, and a sticking Playster, whereby he sufficiently hinders the running out, against your will, of even a drop of Water: For, upon the withdrawing of the Instrument, the open'd Skin, Muscles, and *Peritoneum* are easily by their natural motion so far drawn asunder, that the Holes cannot any more exactly close upon one another.

This being once performed, we regulate our selves

according to the strength of the Patient, staying two, three, or more dayes, before we repeat this Operation; then either the first Orifice is to be opened, or again a new one to be made, especially if the Chirurgion finds, that the Water may be more conveniently drawn away in another place.

In an *Hydrocele* (when the Water is fallen into the *Scrotum*) the said Chirurgion knows by this Instrument so dextrously to discharge the Water out of the *Scrotum*, that the next day you shall not, or hardly, be able to find where the Hole was.

The Perforation seems to me a little inconvenient; wherefore I have caused this Instrument so far to be alter'd, as that I make the end not to be wrought round, but sharp on both sides, Lancet-wise, by which means it may be sooner thrust thorow the Muscles. But then, *this*, may be made of Silver, *mine* must be of Steel.

To the end that you may the better comprehend what we say, we shall represent to your view the Instrument, and the Operation it self, in the ensuing *Figures*.



*Explication of the Figure.*

**FIG. I.**

- A. The Silver Pipe of Mr. Jacob Black, with a round point end.
- B. The little hole, through which the Water passes out of the Belly into the Pipe.
- C. The Stilet or small Wire, to clean the Pipe with, after the operation.

**FIG. II.**

- A. The Steel Pipe of the Author, with an end like a Lancet.
- E. The little Hole, as before.
- F. The Iron-Wire, as before.

**FIG. III.**

- G. The Bed on which the Patient sits.
- H. The Hydropical Person.
- I. The Pipe thrust into the Cavity of the Belly through the right Muscle, where the above-commended Chirurgeon affirms that the made Hole is sooner healed up.
- K. The Basen to receive the Water running-out.
- L. The Chirurgions or Assistants hand.

## CHAP. XV.

*Of the Opening of the Breast.*

**T**Here is sometimes collected in the Cavity of the Breast, a *watery* or *purulent matter*.

The *Water* gathers either by some *Lymphatick Vessels* burst, or from an unconcocted and watriness of the Blood. The *purulent Matter* follows upon inflammations of the Throat, or Lungs, or a Pleurisie, &c.

If it be Matter that is collected, it is called *Empyema*; if Water, *Hydrops Pectoris vel Pulmonis*, the Dropsie of the Breast or Lungs.

The *marks* of the *Water* are, a dry Cough, a painful Heaviness, a difficulty of Breathing, even to Suffocation, great Thirst, little Appetite, a pale Look, and sometimes a swelling of the Legs, now and then accompanied with a Fever; and when the Patient turns himself, you hear a rumbling noise.

The collected *Sanies* may be perceived by the following *Signs*: When the inflammation of the Lungs or *Pleura*, will not, upon Bleeding, or other convenient means, be sufficiently removed, then may you apprehend a collection of such matter to come within a fort-night. Between the 30<sup>th</sup> and 40<sup>th</sup> day the Tumor commonly breaks. The Patient shall find a great heaviness in his Chest without considerable pain; and in case it is accompanied with pain, then you are to expect a new Flux, which you must divert by Bleeding.

The



The Patient hath a short Breath; in motion, he hears a rumbling, at least he is sensible that the matter changeth place, and the side affected is hotter than the other. He casts up, with violent coughing, a purulent matter, having a continual Fever: He finds an anxiety at his heart, and hath little stomach to his meat.

If we cannot expel these Humors by Expecto- rating, nor by Diureticks, nor Diaphoreticks, nor by purging Medicines, than are we forc't to come to manual Operation.

This cannot be done without danger, and is not to be attempted in case the Patient be weak, and the inward parts already corrupted. However, this Operation hath less danger than the next-foregoing, and people oftener recover upon it; yea, Learned Writers assure us, that by this Operation, and the use of Injection, they have cured many of the Ulcers of the Lungs.

Concerning the *Place* of Opening, Authors are not agreed in it; the reason whereof is obvious. For, the *Diaphragma* runs higher in some persons than in others; whence it comes to pass, that the collected Humors in some Patients lie higher than in others. Secondly, The Chest is raised in some, flat in others; which here much alters the case. Besides, the Lungs do often grow so fast to the *Pleura*, that the sanious matter cannot easily be carried into the Cavity of the Breast: In which case it would be ill done, to chase the place of Opening lowest in respect of the *Diaphragma*. And in regard that in this, as in other swellings, the most raised place is, and is esteemed, the most convenient for opening, it cannot be otherwise but that one Chirurgion hath made

choice of this place, and another useth that place as the best. Upon which account, *Hippocrates*, *Guido*, *Amatus Lusitanus*, &c. do open the Chest between the third and fourth Rib, counting from beneath upwards: *Fienus*, *Riverius*, and many others, between the fourth and fifth: *Paulus Aegineta*, *Vidus Vidius*, *Fabritius ab Aquapendente*, *Sennertus*, &c. between the fifth and sixth; which place, in my opinion, is the safest: for, if higher, the *Pericardium*; if lower, the *Diaphragma* may be wounded; of which there have been many sad Examples. But in this difference of dissenting Writers, what hath been said, will direct you to pass into the safest Haven.

All things therefore well considered, chuse the place where to make your Apertion; not the fore-part, (for, before, the *Sternum* or Chest-bone will hinder your Operation here; nor in the back-part, for the Ribs are so close to one another, that without hurting some Vessels, you cannot make any Apertion there) but on the side, 4 or 5 inches from the *Sternum*. Neither ought the Incision to be so near to the upper Ribs, as to the lower, because the intercostal Vessels, viz. the Vein, Artery, and Nerve, lie in the lower part of each Rib, where Nature hath assigned them a place, branching themselves into the middle of the intercostal Muscles; which dissemination nevertheless hinders not, but that the Incision may be made in the middle between the two Ribs.

After you have marked the place with Ink, charge the Patient to hold his breath as long as possibly he can, and in the mean time make an oblique, but small Orifice, and put into it a Silver or Leaden Pipe, and at it suffer four or five drams

drams of Matter to run out in a day. In case the Matter does not run well, place your Patient on the wounded side, and make him to cough; if by reason of its toughness it will not yet come forth, than inject into the Cavity some absterlive, exsiccatting and healing Medicines: As, +

Take Goats Whey, eighteen ounces: Honey of Roses, four ounces: The Juyce of Celandine and Smallage, of each six drams: Mingle it.

Or:

Take the Roots of Comfrey the greater, an ounce: Of Sanicle, half an ounce: The Leaves of Betony, Agrimony, Periwinkle, Pimpernel, of each half a handful: The Cordial Flowers, two pugils: The Seeds of St. Johns-wort, Holy-Thistle, Roman-Nettle, of each half a dram: Boyl them in Water and Honey to a pint and half, + strain it, and keep it for your use.

Of this Injection, the Patient may also drink a little twice or thrice a day.

Here is yet further to be observed, that the collected Matter often lies in a Membrane of its own, and by its rising, manifestis it self from without; and then the *Latins* call it *Vomica Pulmonis*: In which case, you must not stay till the Membrane breaks of it self; for by delay, the over-all flowing Matter is more difficultly to be got out of the Breast; but make an opening presently, taking no other place, but the most raised place of the swelling.

Now, since an *Empyema* for the most part follows upon a *Pleurisie*, and 'tis daily found, that ignorant Chirurgions take all kind of pain in the sides, (as well of the Belly as the Breast, though it come only from simple Winds) for a *Pleurisie*; there-

thereupon immediately opening a Vein : I thought therefore good to write in this place of the *Pleurisie*, as much as is necessary for a Chirurgion to know, for the preventing such mistakes.

*The Pleurisie then is, an inflammation of the Pleura, and commonly of the Lungs themselves, caused from afflux of Blood, accompanied with Pain, Cough, spitting of Blood, shortness of Breath, continual Feaver, strong and quick Pulse.*

The Cause is the Blood, sometimes alone, (when a true Pleurisie) sometimes mix't with other Humors, then it occasions a *Bastard* one.

The Signs, as may be seen in the Description, are so evident, that those, who, for all that, know not how to distinguish it from a *Cholick*, are not worthy of any excuse.

The Prognosticks.] The sooner the matter is concocted, and the whiter and easlier 'tis ejected, the quicker and safer is the Issue. If the Cough, and difficulty of breathing, lessen not by a copious Expectoration, 'tis an ill sign. If the Patient come not to Spit the third or fourth day, then will he scarce see the seventh. If upon Bleeding, and other fit means, the pain cease not, the Patient must either die, or the Pleurisie will turn to a Consumption, or an *Empyema*.

The Cure.] In this case, *Bleeding* is one of the most necessary and safest means of Cure; and if used in time, the Patient, in the very Operation, and before the Vein be closed, will find relief, and sometimes be altogether freed of the pain. Nor do I know any Disease, in which there may, to the Patients benefit, be so much Blood taken away at once, as in this.

There are different Opinions concerning what

side

side the Patient is to Bleed on : But those have had little experience of this sickness, who have not found, that Patients (at least in these Countreys) are relieved much more and sooner, when they are Bled in the Arm of the same side where the Pain is, than when it is done in the opposite side.

The Pain not ceasing in four and twenty hours, we are necessitated to Bleed twice or thrice, most commonly in the same Arm ; but here you must well observe the Patient's strength.

After letting Blood, Purging, Sweating, and Expecterating Remedies, are sometimes very necessary. One onely Medicine I cannot conceal from you, because of its excellency. The Industrious Physitian, Dr. *Hadden*, in his *Cure of the Pleurisie*, hath much commended it, and I have, after once Bleeding, alwayes in the beginning used it with great success, viz.

Take the Juyce of Dandelion, an ounce and half : The Water of Plantain, two ounces : Of Holy-Thistle, and Scabious, Syrup of Poppies Erratick, of each an ounce : Crabs Eyes, a scruple : Mix it.

Let the Patient every half hour take down a spoonful or two of it, until the Flux be stopped : After which you are to use other Remedies.



## CHAP. XVI.

## Of removing a Cataract of the Eye.

**A** Cataract (by the Greeks called *Hypochyma*, by the Latins *Suffusio*; in the German and Belgick Tong, *De Staer*) is a concretion of superfluous Humors, by little and little generating a preternatural Membrane betwixt the Cornea and the Crystalline Humour, covering either totally, or in part, the Pupil of the Eye, and so depriving the Patient of his sight, or hindring it.

*Difference.*] It is either Imperfect, when the Humor is thin, or the Apple of the Eye not totally covered; or Perfect, when it is changed into a Membrane, or the Pupil is quite covered. Sometimes 'tis white, gray, yellow, green, sometimes of a leaden colour, &c. according as the green, yellow, or black Choler is mingled amongst it.

The Seat of it is between the *Cornea*, the *Crystalline* humor, being sometimes nearer to *this*, sometimes to *that*.

The Cause is a Phlegmatick Humour, either collected there by the weakness of the Eyes, or by the Brain transmitted thither by reason of its abundance.

*Signs.*] In the beginning, the Patient sees every thing double, and of many colours; the Air seems to him full of Flies, Nets, and Clouds, and cannot endure a great light. Thereupon his sight lessens, and all things appear as Spots, and at length there follows blindness. If it be just in the

the Center of the Pupil, yet covers not the whole Pupil, but leaveth round about the sight some place free, than all the Patient sees, seems perforated. If the Pupil spreads it self, when you rub the Eye with your Fingers, then is it yet imperfect; if it remains unmoved, there is no doubt of its being perfect.

The *Prognosticks*. ] The imperfect Cataract may easily be cured in the beginning, by convenient External and Internal Medicines, in sound Bodies, and in Patients of a middle Age. The less the Pupil is dilated, the less hope of Cure. The closer the Suffusion is to the ChrySTALLINE Humor, the more dangerous. If the Eye be turned to the Sun, and the Patient then sees no glimmering of light, there is no benefit to be expected from the Manual Operation. If the Humors of the Eye be commixt by the Needle, though the Membrane be removed, then blindness will certainly follow. If in the Operation you happen to touch the Membrane of the Eye, called the *Retina*, the Patient will after that alwayes see the Air, as if full of small Hair and Flyes. A Cataract commonly remains so fast unto the third year, that it cannot follow the Needle; after the third or fourth year it is so firm and hard, that it can by no Art be loosened. The Blood spilt by the use of the Needle, causeth no danger, and soon ceaseth of it self. Though the Cataract be not altogether suppressed, but divided into several pieces, the sight doth often perfectly return within six or eight weeks, though before that time the whole Operation should seem to be fruitless: Which I say from manifold experience.

The *Cure*. ] The imperfect Cataract requires solely

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solely the Aid of the Physitian, who by Medicines, and strengthening the Stomach and Head, have done much; to which purpose the Conserve of Marjoram, Rosemary, Betony, *Pulv. Diambræ, &c.* are very good. And outwardly use the following means.

Take Gum Tragacanth dissolved in Eyebright-water, two drams: Burnt Allom, one scruple: Make a Colirium.

*Or:*

Take Celandine-water, an ounce and half: White-Wine, half an ounce: Spirit of Wine, two drams: White-Vitriol, six grains: Prepared Tutty, a scruple: Glass of Antimony, five grains: Sugar-Candy, two drams and an half: Camphir, six grains: Mix it, and make a *Collirium*.

*Or:*

Take Juycce of Fennel, of Celandine, of each two ounces: Leaves of Rue and Marjoram, of each a pugil: Eye-bright, one handful: Of the Gall of an Ox, four ounces: the Gall of Hens, an ounce: Myrrhe, Aloes, of each a dram and half: Sarcocols, half an ounce: Camphire, two scruples: Mingle them, and let them be distilled in *B. M.*

If the Cataract be confirmed, than let the Manual Operation be your only refuge: But beware of attempting the Operation, if the Patient have long before complained, and still complains of Head-ach, or pain of his Eyes; if the Body hath not been cleansed in general, nor the Head in particular; and if the Patient be yet molested with  
✓ a Fever, Sneezing, Coughing, or Vomiting.

Having chosen a convenient season of the year, and some morning, and the decrease of the Moon,  
and

and a clear Air ; put the Patient in a Chair, somewhat lower than your own, bind up his sound Eye, and make him clap his hands about your waste, without at all stirring them as long as you are busie in the Operation. Let some body hold his Head fast behind, and hold you asunder his Eye-lids, charging him to turn the Eye towards his Nose ; which when he doth, quickly thrust your Needle into the *Cornea*, half a sinews breath from the *Iris*, and bring it unto the hollow of the Eye ; when the Needle hath touched the Cataract, endeavour therewith to press it gently, and so long from above downwards until it remains there ; if it be stubborn, in springing up again and again, divide it into several parts, and keep these Particles, or the whole Cataract a little while under, that it may not return again before the Pupil of the Eye. Then draw out the Needle, and bind up, as well the sound as the unsound Eye, with Linnen-cloths moistened in some Rose-water, the White of an Egg, and a little Allom, mixed together. Beware in the Operation of hurting the Chrystalline Humor, and the sound Tunicles.

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## CHAP. XVII.

### *Of Leeches.*

**L***eeches* more convenient than Scarification, and safer than Bleeding, may with benefit be applyed, as well in strong as in weak Bodies, they only draw Blood from the cutaneous Vessels, by which they cure light Diseases, if only apply-  
ed

ed to the Skin; but if applyed to some greater Vessel, they draw also Blood from the Internal Parts, and so remove internal and more desperate Diseases.

\* There is great care required in the choice of Leeches, for those with great Heads, and that are green and shining, with hair or blew stripes on their Backs, are not without Poyson; as also those that live in standing and putrid waters: but those are to be chosen that are slender, and long, with little Heads, and red Bellies, and such as are nourished in clear running Water: They are never to be applyed to the Part new taken, but after they have been kept a day or more in fair Water, and fed with a little Blood, that they may be cleansed of all their impurities: the place where they are to be applyed, is to be rub'd till it be red; and if they fasten not, 'tis to be moistened with Cream, or with Blood fresh taken from a Pidgeon, or the Part it self to be prick't with a Needle till it bleed; if they draw sluggishly, cut their Tayls off with a pair of Cissars. After they have suck't a sufficient quantity of Blood, and they fall not off themselves, put upon their Heads a little Ashes or Salt, and they will suddenly desist from their work: They are not to be pull'd off by force, lest they leave their Heads behind them, from whence incurable Wounds, and oftentimes Death succeeds: 'Tis to be noted, that they rather draw Arterial Blood then Venal, therefore they ought to suck the less.



## CHAP. XVIII.

*Of the Cutting in the Hard Parts.*

**T**He Section which is used in the Hard and Boney Parts, is of Four kinds; viz. *Scraping, Filing, Sawing, and Perforating, that is Trapaning.*

*Scraping is used in a Fissure and soule Bone, in the Teeth also, when they are cruisted over with a Tartarous black substance: the Bones are to be scraped till you come to the sound part, which is white and solid, and a little blood cast forth; and to the Bone thus scraped, some drying Pouder is to be applyed; the Pericranium and Periostium must first be separated from the Bone, before you go about this operation, for by no means are they to be touched with the Instrument, neither likewise the lips of the Wound.*

*Filing is used in the Teeth, for when they unnaturally stand forth, and either in Eating or Speaking are any hindrance to a Man, then that which thus sticks forth is with a File to be taken off, which must be done carefully, without any injury to the neighbouring parts, and by degrees, neither with too great a violence lest it loosen the Tooth.*

The use of the *Saw* is in a mortified part, when the Bone is to be cut asunder: concerning which Operation I shall suddenly speak.

*Perforating or Trapaning, is of great use when the Bones are extreemly foul, but 'tis of greatest use in those Diseases, which the Fissure or a Fra-*

ture of the Skull, or a Contusion may produce: Seeing therefore this Operation is so full of danger, 'tis diligently to be inquired in what Cases 'tis necessary, and in what 'tis not: for a Fissure as a Fissure, as likewise a Fracture as a Fracture, requires not the Trepan as an operation without which they cannot be Cured: In like manner a slight Contusion doth not alwayes occasion such dangerous symptoms, that the Trepan may not cause worse; for oftentimes a small quantity of Extravassated Blood, in Robust People, is often dissolved by the work of Nature her self, except the Innate Heat be lessened by External Cold, which in the use of the Trepan, let what care possibly be had, cannot be totally avoided; besides this, the Blood is more often Extravassated between the two Membranes, the *Dura Mater* and the *Pia Mater*, there the Trepan can seem to promise but little good; but in this Case I would divide the *Dura Mater*, which may suffer a solution of Continuity, may a Gangrene it self: Experience having taught us, that by the help of Art and Nature, they have been both Cured: *Therefore chiefly, but in three cases is the Trepan required.*

1. *In a Fracture of both Tables, where is a pricking of the Meninges, caused by some pieces of the Skull, which is to be known by the continual pricking Pain presently from the very hurting perceived; granted the Patient be sensible; but if not, he is alwayes feeling the Part affected with his Hands: There hapens likewise Contusions of the Eyes, and Convulsions of the Limbs; but the quality of the Instrument which the Fracture hath made, will more plainly demonstrate it.*

2. *Where the first Table is only depressed, but the*  
*second*

*second broke*; there being no way to give passage to the pieces, how well soever by Art or Nature, separated.

*The Signs.* ] Are a Dimness, a Giddiness, a Fever, Vomiting, and often also an Apoplexy; a feeble small Pulse, and especially about the Temples, the depressed Bone in some manner obstructing the Circulation of the Blood in the Brain.

3. *Extravasation of Blood, upon which follows Putrefaction*, and if not remedied, *Death it self*: The Signs which declare this Putrefaction, is a continued Fever, a great Heat in the Head, unquiet Sleep, Watchings, Inflammation of the Eyes, and light Delirium; And moreover, the Temperaments of Bodies are diligently to be considered; for in Phlethorick People, to those abovenamed Symptoms are joyned, a Laughing and Redness of the whole Face. In the Cholerick appears a yellowness of the Face and Eyes, great Heat, and Madness. In the Phlegmatick, all the Symptoms are less, but sometimes 'tis accompanied with a Palsie, sometimes with an Apoplexy: In Melancholy men, a Dread, impertinent Talk, and Laughing is usual.

Let the Trepan be applied as soon as possible, for 'tis necessary to perform that operation before the putrefaction of the Blood causeth greater evils, that is on the third, fourth, or fifth day.

*The manner of Trepaning* is thus; The Hair being shaved, let the Skin be divided with a double Incision, in form of a Cross to the Pericranium, avoiding with the greatest diligence alwayes the temporal Muscles and the Sutures of the Head: this done, bind up the Wound, except the Hemorrhage be small, ( which very often is so violent,

that it hinders the Chirurgeon for some days from any further operation) if it will then give leave, to divide likewise the *Pericranium* from the Skull: After some few hours (the Skull already bar'd of its *Pericranium*) the Patient well plac'd, his Head must by some person, be firmly held, his Ears being stop't with Cotton, then set on the Trepan with a Pin, which must neither be upon the Fracture, nor upon the Sutures: (although there are some that venture to apply it upon the very Sutures themselves) the Surgeon holding in his left hand, the handle of the Instrument, and with his Right let him gently turn about the Trepan until it hath taken good hold round, then take out the Pin, and set the Trepan on again without it, moving it still about, and if you see any small Filings of the Skull, take off the Trepan and wipe them away; and the Trepan it self is sometimes to be dipt in Oyl that it may the easier be turned about; and sometimes in Water, that it grows not hot. If any Blood appears, you may be certain that the Trepan hath past the first *Table*, then are you to have a greater care, lest the Trepan should unawares slip in, and wound the *Meninges*; this is oftentimes the certainest cause of sudden Death: For the *Dura Mater* invests the inside of the Skull, in the same manner as the *Pericranium* doth the outside, but yet not so strongly joyned to it, but that by a fall, or blow, it may be easily separated from the Skull.

When the piece of Bone, separated by the Trepan, begins to be loose, you must with a little Instrument put in, between the Skull and the Trepan'd part, and free it from the whole, and so gently take it out with a pair of Forceps.

If there remain any inequality from Trepanning, in the inside of the inward Table, that may cause injury to the Meninx, 'tis to be taken away with an Instrument called *Lenticula*.

And that there may be a discharge given to the coagulated Blood, and Matter, the *Dura Mater* is to be compressed with an Instrument called a *Decussorium*: To effect the same, 'tis commended that the Patient (if sensible) his Mouth and Nose being shut, hold his Breath, so that the Brain being raised upward, the concreted and corrupted Matter may be thrown forth; but very seldom is the Matter discharged by this only Remedy; for the Chirurgeon hath need enough of the *Decussorium*, *Spunges*, *Lint*, and the like Instruments: the description and delineation of the which, you may find in *Job. Andr. à Cruce*, *Paræus*, and others. Read the 4th Chapter of the *Fractures of the Skull*.

## CHAP. XIX.

### *Of Ustion, or Burning.*

THOSE Diseases that can neither be Cured by Medicine, nor by Knife, require the Fire, whether they be in the soft or hard parts; In all Burning, great care is to be taken that the neighbouring parts be not hurt; therefore it is very necessary to defend them against it with Lint: That Burning is certainest which is made by an actual Cautrey, *viz.* a Red-hot Iron, than that which is performed by a Potential, that is, by Corrosive



Medicines : yet for the most part, the Patients fearfulness makes choice of this; which soever you use, beware of applying Oyl alone, or Butter, to remove the Escar, for it hath been observed not once only to have occasioned a Gangrene. *Diapalma* Plaister, or Lint wet in Wine will be sufficient.

## CHAP. XX.

### Of Issues.

*Issues are little Ulcers made by Art in a sound part of the Body by a Red-hot Iron, Lancet, Sissars, or Corosive Medicine to evacuate superfluous Humours, and so either to Cure or prevent Diseases.*

As to the *Time* of making Issues, they are chiefly prescribed when we see gentler Medicines to profit nothing, and after the Body hath been well purged.

*The Place where they are made :* It is alwayes to be observed they never ought to be inserted in the beginning, middle, or end of a Muscle, but always in the space between two Muscles which requireth the knowledg of Anatomy; but one taught by experience may find out the place even blindfold : In the Head the place among other Nations, but not amongst us, is accounted the middle of the *Coronal Suter*. In the Neck they are not so often made how necessary soever they may appear. The *Italians* use to make them between the Shoulders with success. In other places they are either very troublesome or inconvenient.

The

The *Manner* of making Issues is divers: If you make use of the *Potential Cantery*, apply a Plaister to the part, having a hole in the middle, in which lay a little *Costick*, and over that a Bolster and another Plaister; after three or four hours, take off the Plaisters, and laying on the Escar a Plaister of *Diapalma*, dressing it twice a day, that it may the sooner separate.

Those which desire it rather by *Incision*, the Skin being taken up either by the Forceps, or by the Hand; divide it with a pair of Scissors or Lancet. If Burning be prefer'd before the other wayes: Burn the Skin, but not the subjacent Muscles, for indeed the Skin it self is not to be wholly penetrated, oftentimes the touching only the superficies of it is enough.

When the Scar falls off, take little hard Dossels made of Lint, spread upon them some Deterfive Medicine, and press them into the Ulcer, until they have made a sufficient impression; then afterward, keep in this Cavity a ball of Wax, Wood, or Silver, or a Pea, which is to be often taken out, and another put in, and so is to be continued till the Disease be cured, or Weakness hinder.

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## CHAP. XXI.

### *Of the Seton.*

Although the Application of a *Seton* be with greater trouble than an *Issue*, yet it brings much greater advantage to the sick Patient, for what *two Issues* cannot remove, oftentimes is performed by *one Seton*. F 4 The

The Place of applying it, is the Neck, viz. in the Nape, between the first and second Vertebra, or second and third, yea, between the third and fourth; which is only in use amongst us, but I could wish it was more frequent; it may also be applied to the Arms and Leggs, and other Parts.

There are three Instruments necessary to perform this Operation: A pair of Forceps, a Needle, and String. The Forceps which are to hold up the Skin, must be perforated of each side; the Needle must be three pointed, and answer to the holes of the Forceps, which it must pass through. The String is to be of silk, not exceeding the thickness of the Needle: Let the Chirurgeon take up the Skin with the Forceps, and gripe it hard, which being somewhat stupified, the Patient will feel the less pain; then let him pass the Needle red hot through both the holes of the Forceps, Skin and all; after which with another Needle let him bring through the Thred: The first day, to ease pain, apply to the part a Linnen Rag wet in Whites of Eggs and Rose-water mixt together; afterward let Digestion be procured by the use of convenient Medicines; when digested, let the String be drawn every day, sometimes to this side, sometimes to that, so that the mattery-part may hang out of the Wound. Thus the Operation being perfected, the Ulcer may be kept open as long as occasion requires, or the Patient pleaseth.

After this manner many Authors, both Ancient and Modern, order the making the Seton: but this Operation is much easier performed if in the right place the Chirurgion take up the Skin, with one hand, and his Servant with another, and so pass

it through with a sharp pointed Needle, but not made hot; the String being of Thred, not Silk, of convenient thickness, and rub'd with Wax.

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## CHAP. XXII.

### *Of the drawing forth of Bullets.*

**E**xeresis removes things superfluous: They are of a two-fold Nature, either they are generated in the Body it self, or else brought thither by accident.

We treat of the last first, to wit, *The extraction of Bullets out of the Body*; which is not difficult, if it appears whether it be nearer to the part where it made its entrance, or to the opposite to which it hath penetrated.

If it be observed to be near the Orifice, let it be drawn forth with a convenient Instrument: If nearer to the opposite part, let Incision be made upon it, and there taken forth: But if the Bullet cannot be found out by a Probe, the Member is to be so plac'd, that the Bullet by its own weight may come forth; which if it happens not to do, the Wound is to be cured; and let the Chirurgion expect until the Bullet shows it self near the Skin, which very often requires a long time.

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## C H A P. XXIII.

*Of the Extraction of a Dead Child,  
and the Secundine.*

**T***Hat the Birth may be Natural*, these things are required, That the Infant the whole time of its continuance in its Mothers Womb, lyes in such a posture, that the Arms and Feet being contracted, the Head looking downwards may have the Face towards the Mothers Back; the whole *Fœtus* lying transverss in the bottom of the Womb; but when requiring greater room which happens in the 7th, sometimes in the 8th or 10th, for the most part in the 9th Month the whole falls downward, turning its Face to the Mothers Belly, and the Head it self to the mouth of the Womb; the Limbs which were contracted, being extended, it breaks through the Membrane wherein it was included, by which the Water, that is contained in them, flows forth, which serve to make the Privy slippery, and so is convenient to facilitate the Birth.

Through the defect of any of these in either, both the Mother and the Child, although they may live, yet there follows no Exclusion, for if the Mother lives, the Child dies; if the Child lives, then the Mother dies, or both the Mother and Infant dies.

*Causes bindring Labour. ] Are, 1. The Pains of the Birth, which are none, or not sufficient. 2. The great Weakness of the Mother. 3. The Magnitude and*



*and Strength of the Child ; and on the contrary, the ſlenderneſſ and tender Conſtitution of the Mother, whereby the ſtraitneſſ of the Paſſages may be judged.*

4. *The number of Children, eſpecially if they endeavour to come forth at the ſame time.* 5. *The Tranſverſe, or any other preternatural Poſture of the Child.* 6. *If the Child in the Birth it ſelf be fallen down with its Head towards the fore-part of the Oſſa Pubis, which caſe Authors of the greateſt account, whom I know, and our Midwives do little regard ; ſo by how much the greater the Pains of the Birth are, there is ſo much the leſs hope of coming out, except the Head be firſt a little raiſed, and the Fetus be turned towards the Back, and ſo into its true Paſſage by the Hand of the Midwife.* 7. *The Weakneſſ of the Child it ſelf, which makes it not able to add any thing towards its Excluſion.* 8. *The Death of the Child.* 9. *The inſufficient Recesses of the Hip-bones towards the Back : for the Oſſa Pubis, except in the very hardeſt Labours, and then but very ſeldom do divide.*

*The Signs of a Dead Child are as followeth.*

The Mother feels no more the Motion of the Infant, although Cordials be exhibited ; great Faintings oftentimes cauſed by the leaſt motion : That you may be the more certain, Take a piece of the crum of Bread, and dip it in Canary Wine, and apply it to the Navel of the Mother, then open a Vein in the Foot, and if by the uſe of theſe things you effect nothing, its a very ill ſign. +

When the Mother turns her ſelf from one ſide to the other, and perceives the Child to fall on the ſide laid upon like a ſtone ; the Face, and chiefly the

the Lips grow pale, the extream Parts cold, as likewise the lower Belly, the Paps begin to grow lank, the Breath becomes foetid, great Pains of the Head, Faintings and Feavers, Water and stinking Gleet flows out of the Womb; If the After-birth be excluded before the Child, tis impossible the Child can live long; but the surest sign of all is, if the Membrane of the Head of the Child be not observed to be any longer extended.

*Prognostick.*] Except the Dead Child be suddenly drawn forth, it puts the Mother in great hazard of Life. There being but a slight Feaver, other Symptoms, though great and fearful, yet take not away the hope of Recovery.

*The Cure.*] If Medicines, with the aid of Mother and Midwife, profit little, then must the business be committed wholly to the Chirurgeon, except the Woman be too weak, or the Child having been dead for many dayes, which he ought to consider, lest he lose both his Credit and Labour.

But first, it is diligently to be enquired into which of the Causes it is that hinders the Birth: If the Child be greater and the Passage straiter than usually, they ought to be Dilated; this some Midwives do with convenient Instruments, and so draw forth the Child alive; but where they are wanting, the Midwife must clutch her Hand very close, and thrust through the Internal Orifice into the Womb it self; then putting her Fingers one after another through the Orifice into the Inner Part of the Womb, to discover the situation of the Child; and if she finds the Arms or Feet to come inconveniently, let her gently raise it up, bringing the Head downwards, which  
if

if she finds to be next the Orifice, if possible, let her put in her other Hand through the *Pudenda* into the Womb, and so with both her Hands laying hold of it, draw it forth.

But if this Operation cannot be performed, then with a Hook firmly fixt (lest it injure the inside of the Womb) in the Mouth, Eye, or Ear of the Child, and so gently draw it forth: And if the *Fetus* will not follow, then with another Hook, blunt on the outside and sharp within, let him cut in pieces the Belly, Breast, or Head of the Child; and if the Arms or Legs cannot be brought forth, let him cut them off; so at length, being deprived of its Limbs, the remainder may be drawn forth.

But if by this way the Woman can neither be delivered; with a sharp and strong Knife, the Limbs, one after another, are to be cut out, and so the Child be drawn forth by piece-meal: It is necessary that this be performed by none but a good Anatomist.

The *Secundine* will presently follow the Birth, for its of no use, that being excluded; for the Mouth of the Womb, suddenly after Delivery, is so closely shut, that not without great Pain it can admit the Hand of the Midwife; therefore the Midwife, as soon as may be, is to draw it forth, and with her Fingers, if it sticks very close to the Womb, gently to separate it, but not pluck it away forcibly, which is mortal: And although many Writers and Midwives of Inferiour Rank, little regard the Retention of the After-birth for sometime: yet I think I have good reason to pronounce it, one of the greatest Symptoms of Womens Labour.

## C H A P. XXIV.

*Of the Extirpating of a mortified Part.*

**W**HEN a dead Part altogether becomes useless, that it may not do any injury to the neighbouring Parts, it is to be *taken away*: *But in what place?* Most convenient is the Joynt; but the Cure by such Extirpation is rendered more difficult, and the use of the Part altogether lost; therefore the Extirpation is better to be made two, or three, or more fingers breadth below the Joynt, except the Mortification hath extended it self to the uppermost parts of the Arms or Thighs, for then we are forced to take the Joynt it self: *But in what Part?* Whether in the Whole or Mortified? the Amputation is more safe in the Sound Part, although accompanied with greater Pain.

*The common way both of the Ancient  
and Modern.*

The Patient having received convenient nourishment, is to be placed upon a Form, then let the Skin, and subjacent Muscles, be drawn up as much as possible, by a strong man; and an inch above the place where the Member is designed to be taken off, with a narrow Ligature is the Part to be very hard bound: This done, with a dismembring Knife, the Skin with the Flesh is speedily to be cut all round to the Part, and the *Periostium*, by scraping, is to be separated from the Bone;

Bone; and if it be where there is a double Bone, as in the Leg, and below the Elbow, the Flesh and Ligaments between them is to be divided, which being perforated, let the Bone be separated with a very sharp Saw. If the Flux of Blood be not great, to apply only those Medicines that stop Blood, will be sufficient; but if great, an actual Cautery is to be used, which is only to be applied upon the great Vessels; then let the Ligature be taken off, and the Part be fitly bound up.

If either the Patient or Chirurgion be averse to the use of a Cautery, then as soon as the Member is taken off, let the Skin, together with the Flesh, in four distinct places opposite one to the other, be taken up with a Needle and waxed Thred, and the Ligature being loosened above, or drawn down, that, if possible, they may meet. So by this way is the *Hemorrhage* staid, the Bone preserved from all danger, and the Wound sooner Cured. But this manner is painful and troublesome, therefore ought it the seldomer to be used.

*Aquapendens bis Wry.*

When the principal design of Art in this Operation, is to put a stop to Putrefaction, to cause as little Pain as may be, and to stay the flux of Blood, all which the above-quoted Author thinks may be done, if the Member be Amputated in the dead Part, but near to the sound; then the Bone being divided, with burning hot Irons let the remainder of the dead Part be Cauterized till the Patient perceive the heat of the Fire; So he writes, that by this Course a flux of Blood is not to be feared, less Pain is caused, and within the space of two

or



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or three dayes, will appear a separation of the Mortified Part from the Sound : But in my opinion, we ought to consider well of the Cause. For in a *Spacelus*, sprung from an Internal Cause, in a Body, otherwise sound, this way is the best ; but in a *Spacelus* caused from a defect of innate Heat, the former is more profitable.

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C H A P. XXV.

*Of the Fleshy Rupture.*

+ *S*arcocoele, which is a Fleshy Rupture, is a Tumour besides Nature, produced from impure Blood, flowing in too great quantity into the Testicles, and there degenerated into Flesh.

In this diffinition, received by the best Physicians and Chirurgeons, I note two things ; 1. The Cause of this Tumour, not to be impure blood, seeing the best, may produce it ; not simply abounding in quantity, because it happens also in wasted Bodies, though 'tis not so soon generated, nor arrives to such a greatness in these, as in those Bodies : But the true Cause is the Erosion Rupture, or Dilatation of the Membranes, which close the Mouths of the Capillary Vessels, that the nutritious Blood may not flow too suddenly into the Part ; from whence, more Blood flows into the Part than what is required for its nourishment ; and Nature changeth that Blood which otherwise would putrifie into a fleshy substance. 2. This flesh sometimes grows to the second of the common Tunics of the Scrotum, and not to the Testicles, in which case it may be taken away

way, without either hurting or cutting of them out.

*Signs* are, the hardneſs and ſlow increaſe of the Tumor, which is rather more troubleſome, then painful, except accompanied with ſharp Humors; no appearance of any Tumor in the Groin.

*Prognſticks.* ] A *Sacrocele* is hardly Cured by the help of Medicines, and ſeldom by Manual Operation, without taking off the Teſticle, if it extends it ſelf into the Groins; for the moſt part incurable.

*Cure.* ] In the beginning, when the Membranes of the Veſſels being Eroded, Broke, or Dilated, do give leave for too much Blood to iſſue forth, *bleeding, and the uſe of Repelling and Aſtringent Medicines profit much*; but when it hath begun to Augment, then we may uſe theſe following Means; Let there be made a little Orifice in the Scrotum, rather in its Superior then Inferior part, through which by the help of Plegets let Suppurating Medicines be applyed, ſo that if poſſible to waſte the fleſh, every dreſſing diligently wiping away the Matter, but not all, that the remaining fleſh may be the better conſumed.

*If theſe things ſucceed not*, draw forth the Teſticle, and by Inciſion take off as much fleſh as may be done without injury to it, then reſtore it again into its place, and the remainder of the fleſh endeavour to conſume by Suppuration.

*But if there be no hopes of curing this Rupture by the recited means*, draw forth the Hernious Teſticle as far as you may, then paſs once or twice a Silken Thred ſtraight above the Tumor by the Proceſs of the *Peitonaum*, then paſs both ends of the Silk through the Orifice it ſelf, ſo that which

was on the right ſide, may be on the left, and that of the left on the right, and having tied it with a double knot, cut off the Teſticle, letting both the ends of the Silk hang out of the *Scrotum*, and ſo cure it as another Wound.

I cannot here but friendly adviſe, 1. *That the Cauſe ought truly to be known before the Chirurgeon comes to the Operation it ſelf*, for ſometimes the *Paraſtates* are ſo ſwelled; eſpecially the Teſticles being *Schirrhouſ*, that they may eaſily deceive a very curious Examiner. 2. The Ligature ought to be made as near to the Tumor as poſſible, for by how much the higher part of the Proceſs of the *Peritonæum* be perforated, it is obſerved to be ſo much the thicker, which thing will retard the Suppurations; in the mean time *Convulſions* coming on denounce Death. 3. The Spermatick Veſſels detained in the *Scrotum*, oftentimes by Nature's variety, exceed the Teſticles themſelves in greatneſs, which cauſes no other inconvenience but only fear, which I have obſerved to be true, in more than one.

## CHAP. XXVI.

### *The Extraction of the Stone out of the Bladder.*

**T**He Stone is a hard body concreted from Slimy, Salt, or Earthy Matter, by a peculiar Lapidifying quality, cauſing Pain, Obſtruction, and other Symptoms in the place where it is detained.

The Cauſe is a Petuitous Salt, or Earthy Matter,

ter, which neither by labour, nor cold, but by a peculiar Lapidifying quality is changed into a Stone.

*Signes.* ] The Urine is White Slimy, Crude, and troubled, suddenly adhering to the Urinal; sometimes it is Bloody, & sometimes Sandy or Gravelly, sometimes full of little Threds, and not seldom suppressed. A great Thirst, a frequent making of Urine, but with pain, and by drops, the Patients place themselves with their Thighs across, always holding their Privy parts in their hands, pressing the bottom of their belly; the privy part is always erected: very painful to go or walk: in the Region of the Bladder a weight perceived: The Patient seldom making water without going to Stool; the intestine commonly falls out, especially in young people.

Although all these Signs may be true, yet they are oftentimes very uncertain; it was formerly the Custom with a *Catheter* passed through the *Ureter* into the Bladder, then thrusting in one or two fingers into the *Anus*, not only to search for the Stone, but also to understand its greatness. But this searching was so very painful, that it was difficult, through fear of pain, to have it permitted a second time, & this thing gave occasion to have ready at the second time of searching, all Instruments necessary for cutting out the Stone; but the Almighty hath now granted to those miserable Patients, those Chirurgeons, who not only without *Catheters*, but also without pain both in old people and children, which can most certainly find out the Stone: and for this Reason they excel the so much esteemed *French-men*: I wish other places also may enjoy the same Artists.

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*Prognostick.* ] A crumbling Stone seldom; a hard Stone can never be watted by Medicines, whatsoever boasting persons may say; sometimes it is so soft that by the very *Catheter* it self it may be broke to pieces in the neck of the Bladder, and be brought forth: sometimes through its finalness it comes forth whole; sometimes it sticks in the *Urethra*, out of which without danger and great pain it cannot be removed; if it sticks in the *Tunnicles* of the Bladder, or grows to the Superficies of the Interiour Coat, it cannot be taken away by Section without the death of the Patient: by how much the greater the Stone is, the Operation is the more dangerous, and painful. Stones are often drawn forth out of Womens Bladders about the bigness of an Olive, or a Walnut, without Incision: but this way by Dilatation, of Extracting the Stone, is so dangerous, that it ought not to be performed but by Experienced Chirurgions.

*Cure.* ] Stones generated in the Kidneys, Bladder, or other parts of the body ( for, they may in any ) in general, require the assistance of the Physician, but we in this place treat only of the Manner of Drawing them forth out of the Bladder by Incision. There are several wayes by various Authors proposed; but that which follows is the most common, and most sure.

Let the Chirurghion place his Patient on a soft Pillow in a strong mans Lap, after he has three or four times jumpt from a high place, then let him tye both his hands to the soles of his Feet, and let two standers-by hold each Knee, extending them as far as may be one from the other; then let him take the first Finger of his left Hand, or if necessity requires, the two first, anointed with Oyl of Lillies,



Lillies, Roses, or fresh Almonds, and thrust them up the *Anus*, with his right hand gently compressing above the *Os Pubis*, so that the Stone may slip down, under the *Os Pubis*, into the *Perineum*; which when brought thither by the foresaid Fingers, let him make Incision, with a sharp Knife in the left side between the Testicles and the *Anus*, near to the Suture of the *Perineum*, cutting to the very Stone it self, and if it comes not out of the Wound it self, nor by the thrusting forth of the Fingers which are in the *Intestinum Rectum*, let him draw it forth with a pair of Forceps, or which is better, with the *Lapidillum*: The Stone being taken out, and all the Ligatures loosed, let the Wound be bound up according to Art, applying Medicines, stopping Blood, viz. of Meal and Bole, &c. with the greatest care to consolidate it as soon as possible, least the Patient labour with a dropping of his Urine through the wounded Part: And this is the manner of drawing forth the Stone, which Chirurgions use to call *Apparatus Minor*, which chiefly is used in Children, although there are those which proceed thus in people of full Growth; But in our Countrey alwayes this Incision, is made by them whose Fingers are fitted for this Operation.

But in People of full Age it is sometimes very difficult to reach the Stone by the Fingers put up into the *Anus*; and after the same manner to bring it down into the *Perineum*, if not altogether impossible as many think it; therefore there is another way found out, which they call *Apparatus Major*; the Patient is put on a Table and bound, and held as above, the Chirurgeon through the *Uretra* passeth a Director into the

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Bladder to the Stone, then Incision being made as above, into the hollow of the Director, puts in the Conductor, taking the Director, out of the *Uretra*, he passeth into the Wound the Forceps, the *Lapidillum*, or other Instrument convenient for drawing out the Stone, by which he may both lay hold of it, and draw it forth, not making use of his Fingers in the *Anus*, except great necessity compel him to it. Where the Stone is bigger than the Orifice, and cannot come forth, the Wound is to be enlarged, or the Stone to be broken into pieces by the Forceps, and so drawn forth in parts: This done, the Binding and Consolidating the Wound ought to be the same as in Children, giving it a stich if it be too great, putting in a Silver Pipe for two or three days that may give passage to the Concreted Blood, Slime, and Sandy Urine.

The Manner is the same in Women, but only the Fingers are not put into the *Anus*, but into to Privy parts, and the Catheter must not be crooked but straight, and much shorter than the other.

There is likewise another Manner of drawing forth the Stone; the Chirurgion thrusting his Finger into the *Anus*, presseth the Stone upwards to the Belly, then through the Wound made in the right Muscle above the *Os pubis* according to the *ductus* of its Fibres, by the assistance of the *Lapidillum*, or Forceps draw forth the Stone; by this way is never observed any coming forth of the Urine, and the place supposed convenient to draw forth the Stone: But this Operation in it self is dangerous and troublesome, and if the Lips of the Wound made in the Bladder unite not to the

the Muscles of the Abdomen, there follows an Ulcer of the Bladder more painful, but less curable than the Stone it self; which inconvenience hath caused it not to be reckoned among other Operations by true Practisers.

## C H A P. XXVII.

*Of the Hare-Lip.*

**A**N *nasplerosis*, the last of Operations which restores what is deficient, is chiefly used when any part of the Nose, Lip, or Ear is wanting, whether it be from the Birth, or from an External Cause.

As to the Lip, in a little defect, let it be first separated from the Gums, then let the edges be scarified and joyn'd together with a Needle, laying over it an Agglutenating Paister, and so in a short time the Cure will be performed.

In a greater Defect, let the Lip be separated from the Gums, then put a Linnen Cloth between, and let the Extremities be brought together by Bandage, after some few dayes, convenient Scarification being made, by the help of a Stich, and Plaisters, let the ends be united.

The Nose and Ears being deprived of any part, after what Manner they are Cured: *Taliacotius* in a particular Treatise hath largely set down, to the which I refer the Reader.

*The end of the first Part.*



## Verbetty's Chirurgery.

*The second Part.*

Which Treats of *Tumors*, *Wounds*,  
and *Ulcers*. In three Books.

The First Book of the second Part of Chirurgery,  
*Of Tumors.*

### CHAP. I.

*Of Tumors in general.*



*Tumor* besides Nature, is a Disease in which the Parts of the Body are indecently enlarged or extended, so that they are rendered unfit to perform its Actions.

The Differences of Tumors are taken, 1. From the Part Affected; thus an Inflammation of the Eyes, Jaws, &c. 2. From the Causes.

The Causes are, 1. The parts of the Body removed out of their Natural place. 2. The four Humors,

mors, as well Natural as Preternatural, viz. Blood, Choler, Phlegm, Melancholy, to which likewise we add Water and Wind.

Tumors for the most part are Generated from the Humors, and that either by Congestion, or Fluctuation.

That, happens when the Natural Heat of the part being diminished, the good Humors are ill Concocted, or the Vicious are not sufficiently Evacuated.

This Acknowledges a twofold Cause, External, viz. a Fall, Blow, External heat, too great Motion, &c. Internal, viz. Pain, Superabundancy, Thinness, Acrimony of Humors, &c.

The Signs of Tumors are an Extention of the Part, Pain, Redness, Heat, Hardness, &c. But these are better Explained in particular Tumors, than in general.

The times of Tumors ( for all curable Tumors have four ) are as followeth, *beginning*, when the Part begins to swell; *increase*, the swelling Pain, and other Symptoms are augmented; the *State*, the Symptoms stand at a stay, and grows not worser; In the *Declination* all the Symptoms are diminished.

*Paagnotick.* ] Tumors produced from Phlegm or Melancholy are of hard Cure. Those are dangerous which are Generated from corrupt Blood or Choler, which seizeth the Internal parts, which shew themselves about the greater Vessels, Joynts, Nerves, and the Membranous or Noble Parts: Those that are of great bigness, and that happen in *Cacochimick* Bodies.

They are *Terminated* four ways, 1. By *Disipation*, which the lessening of the Symptoms do declare.



clare. 2. By *Suppuration*, by which the Pain and Pulsation is increased with a Fever. 3. By *Induration*, which the too often and immoderate use of Repelling and Dissipating Medicines hath caused. 4. *Degenerating into a Gangrene*, from the Defect of Natural heat.

The Cure is performed two ways, 1. By *binding any further Flux to the part*. 2. In removing *that which is already gathered in the part*.

We stay the Flux of Humors, 1. By *Intercepting*. 2. By *Repelling*. 3. By *Revelling*. 4. By *Derevation*. 5. By *Corroborating the part it self*.

The Matter already gathered, is taken away, 1. By *Astringing and Repelling Medicines*, to wit, when 'tis thin, and sticks not too firm to the parts. 2. By *Resolvents*, when it is thick, and adheres more firmly to the part. 3. By *Suppuratives*, when the other are too weak. 4. By *Fire*, when other means effect nothing.

## CHAP. II.

### Of Inflammation.

**A**N Inflammation is a Tumor besides Nature, from Blood thrown forth into the Skin or Subjacent Muscles, causing Heat, Redness, Pain, Pulsation, and Tension.

Difference. ] ; 'Tis Perfect, when from Blood alone ; Imperfect, when Choler, Phlegm, or Melancholy, is mixed with the Blood, and then 'tis called Plegmone, Erysipelatodes, Oedematodes, Scbirrhodes.

The

The *Cause* is sometimes *Blood alone*, sometimes mixt with *other Humors*.

*Signs*, are Heat, Redness, Pain, Pulsation, Shining, Tension, Hardness, Renitency.

*Prognosticks.* ] An Inflammation of the External Parts, frees the Internal from many Diseases; alwayes wholesome, except from its too great extension it produceth a Gangrene: dangerous and of hard Cure, is that which seizeth on the Eyes, Jaws, Penis, Pudendum Muliebre, and Joynts. In a young person, and in Sommer soon Cured; longer of Cure, in a fat, than lean body.

The *Cure* hath four *Indications*. The first of these respects a good Diet; let him choose a clear Air, his Meat and Drink little, and that cooling; all hot, sweet, and fat things, as Pepper and Ginger are hurtful; as also the motion of the Body, especially of the part affected; sleep is very convenient: All Costiveness, Anger, and Venery are noxious.

Second, that stops the further Flux of the Humor, which may be performed by Revulsion, Derivation, Repelling, and Interception; therefore let a Vein be opened as soon as possible, it being most necessary: Revulsion is made in the Opposite, and most Remote part, Derivation in the nearest: If you may not open a Vein, you must use Leeches and Scarifications. Whilst these things are done, seeing the Body is seldom clean, but that always there are ill Humors mixt with the Blood, by Purging rightly used, and often repeated, as also Bleeding, we effect much.

In the mean time, the part affected requires Repelling Medicines, from which we must abstain. Where, 1. The Noble Parts sends the Hu-  
mors

humors to convenient places, and to the *Glandules*.  
 2. Where the Humors are Malignant. 3. When  
 Critical. 4. When the body is very impure.  
 5. When the part affected is very iweak or pain-  
 ful. 6. Where the Inflammation is about some  
 Noble Part.

### Repelling, Medicines.

The Roots of Bistort, Tormentil; the Leaves  
 of Cyprus, Mirtles, Plantain, and Oak; the Flowers  
 of Balaustians, and Roses, Quince-seeds, Red Sau-  
 ders, Galls, Acacia, Dragons-Blood, Whites of  
 Eggs, Vinegar, Red Wine, Allum, Boale, Oyl of  
 Roses, Mirtles, *Empe. de Spermate Ranarum*.

Take Rose-Vinegar two ounces, Whites of  
 Eggs beat together, N<sup>o</sup>. 2. Bole-Armenick three  
 drams, *Lap. Hematidis* a dram: mix them.

Take the the juice of Housleek, Purslane, and  
 Plantane, of each an ounce; Rose-Vinegar, some  
 Red Wine, of each an ounce and half; Oyl of  
 Mertles an ounce: Stir them together in a Leaden  
 Morter, adding to them of the Powder of Pom-  
 granate-Rinds, and Bistort, of each a dram: make  
 it into a Linament.

3. Indication concerns the Humor already  
 past: In this place Resolvents are first to be used:  
 But they not effectual, then apply Suppurat-  
 tives.

### Resolvents, or Discussives.

Roots of Galangal, Orise, Dill, Southernwood,  
 Rue, Savin; Flowers of Camomil, Millilot, El-  
 der, Aniseeds, Carrawayes, and Cummin, Am-  
 moniacum

moniacum, Edellium, Sagapennum, Tacamahac, Oyl of Dill, Nard, Rue, Bayes; Oyntment of *Agrippa*, *Mariatum*; Emplaisters of Bettoni, Oxicrocetum, Diachilon, Leaven, the Dung of Beasts; Spirit, and Lees of Wine.

Take Roots of Orise, Marsh Mallows, of each an ounce and half; the tops of Wormwood, Flowers of Camomile, Mellilote, of each one Pugil; Herbs, of Pellitory of the Wall, Mullein, of each one handful; Meal of Barley; and Fenugreek, as much as is sufficient: boyl them in Whitewine, then being beaten together, add of Oyl of Orise, and Camomile, of each an ounce: make it into a Cataplasm.

Or,

Take Cows-dung, three ounces; Juice of Houf-leek, one ounce; Oyl of Camomile half an ounces; Castor two drams, Bole-Armonick half a dram, Red Mirrhe, two drams; Saffron one dram; Meal of Lupins, as much as sufficeth to make it into a Pultise.

### Suppuratives.

Marsh-Mallow Roots, Mallows, Camomile Flowers, Figs, Galbanum, Edellium, *Sagapennum*, *Ammoniacum*, fat of Hogs, Geese, Ducks; Hens, Oyl of white Lillies; Oyntment of Marshmallows both Simple and Compound, Basilicon, the Plaisters, of Diachylon, of Mussilages and Mellilote.

Take Onions roasted in Embers three ounces, Figs No. x. beat them together, adding of Oyntment of Basilicon, six drams; Ducks-Grease an ounce, Virgins-Honey, and the Meal of Linseed, of each as much as is sufficient to make it into a Cataplasm. Or,

Take

Take the Roots of White-Lillies, Marsh-Mallows, of each an ounce and half; Leaves of Marsh-mallows, Cows-parsnips, of each an handful, Figgs No. viij. Reasins, six drams; Meal of Marsh-mallow Roots, or of Wheat, two ounces Venice Sope three drams: being boiled, & strained, add to them of Hogs-Grease an ounce, Oyl of Camomil two ounces; Mix them according to Art, and make a Cataplasme.

4. Indication respects the Symtoms, which if not removed, hinder the Cure; the chief of which, are

1. A *Feaver*; The Cure of which concerns a Physitian, except it be removed by Bleeding.

2. *Harndesi*; Whose Cure look for in the Chapt. of *Schyrrhus*.

3. A *Gangrene*; Which is treated of in a particular Chapter.

4. *Pain*; Which we do remove by the following Medicines.

#### *Anodins.*

Marsh-mallows, Dill, Mallows, Camomil, Henbane, Tobacco, Linseed, Seed of Poppy, Fenugreek, *Sperma Cati*, Cream, White of Eggs, Oyl of White Lillies, Linseed, Oynntment of Populeon; fat of Hoggs, Hens, and Mans Opium

The great Vertues of the following Poultrice I have not seldom experimented.

Take Flowers of Dill, Camomil, of each a handful; Elder a handful and half; Linseed Meal, four ounces: Oyl of Dill, White Lillies, of each half an ounce; Boyl them in Milk to the consistence of a Poultrice.



## CHAP. III.

## Erysipelas.

**E**rysipelas is a Tumor besides Nature, from Choler, thrown forth for the most part only into the Skin it self, sometimes on the Subjacent Muscles, occasioning Pain, Heat, and other Symptoms.

*Difference.* ] 'Tis perfect when sprung from Choler alone; as it is imperfect, when Blood, Phlegm, or Melancholy is mixt with it, from whose Apellation it likewise takes its name, and is called *Erysipelas*, *Phlegmonodes*, *Oedematodes*, *Scirrholders*; sometimes an Ulcer is joyn'd with it, which sometimes consumes only the Skin, other-times the Flesh it self.

*Cause* is Choler, seldom alone, but sometimes Phlegm and Melancholy; sometimes Blood, or Serum is mixt with it; whence, those Medicines that are proper for a Phlegmon, oftentimes do good in an Erysipelas.

*Signs.* ] Great heat, sharp pain, Redness mixt with Yellowness, easily giving way to the touch, but as suddenly returning; the Swelling and Extension of the part little, and the Pulsation lesser: which last gave occasion to Authors, of questioning whether an Erysipelas ought to be reckoned amongst Tumors. It is accompanied alwayes with a Fever, Except from an External Cause.

*Prognosticks.* ] An Erysipelas is seldom dangerous, except the Matter be repell'd from the External

ternal Parts to the Internal; yet more dangerous when it seiseth on the Noble parts, and Jaws; and when a Wound, Fracture, Dislocation or Putrifaction are joyn'd with it.

*Cure.* ] What concerns *Diet* here, is first, and chiefly to be considered, *Air, Meat* and *Drink* must be cooling: all sharp, hot, fat and sweet things hurt, as likewise do too *great Motion of the body, Watchings, Costiveness, Venery, and Anger.*

Purging is very necessary, therefore those Medicines described in the third Chapter of the first Part, are here convenient.

A perfect Erysipelas admits not of *Bleeding*, for the fatness of the Blood, bridles the sharpness of the Choler: But if the Feaver be vehement, the Flux great, and any blood (which for the most part happens) be mingled with the Choler, 'tis convenient to bleed, especially in Plethorick bodies: In delicate and weak bodies, Cupping-Glasses with Scarification or Leeches, if things should require, will serve.

These being thus done to provoke Sweat, is the best of all other Remedies.

*Outwardly* to the affected part, *ought not to be applyed*, 1. *Oyl*, or any *fat thing*; as those things which yield matter to the Choler, easily increase Putrifaction: But if yet it is your pleasure to use them, they must be tempered by mixing them with other Medicines. 2. *Repellents*, except the Erysipelas be very little, the part affected remote from the Noble Part, and the Humors be yet flowing, and then they ought not to be used without Resolvents mixt with them.

The Cataplasms described in the foregoing Chapter, may for the most part be applyed here with success.

The

The Plaister of Diapalma dissolv'd in Vinegar is in daily use; the leaves of Tobacco, Colewort, and Henbane applyed to the part affected, strongly draw forth the heat: There are those which use Sheeps-dung boyled in Wine-Vinegar; as also the Flowers of Camomil, Mellilot, and Elders, boyl'd in new Milk.

Chalk powdred, put upon the part, laying Cap-paper over it, quickly and safely cures.

The following Fomentations I have experienc'd to be of great virtue.

Take Red Mirrhe poudred, two drams; Saccharum Saturni one dram; Camphir a Scruple, Opium 25 grains, White-wine six ounces: Let Linnen Clothes be dipt in it, and applyed warm to the part, often renewing them, when dryed, or cold.

*Another.*

Take the white Troches of Rhasis one dram, Camphire one Scruple, Spirit of Wine an ounce, Elder-water six ounces: Mingle and apply it as before.

Fumes of Mastick, and Frankincense may likewise be used five or six times a day, especially if the Erysipelas be in the Face.

*When an Ulcer accompanies it.*

Take the white Troches of Rhasis, two drams; Red Mirrhe, Litharge of Gold, of each a dram; Flower of Brimstone half a dram; Sarcocol, two Scruples; whites of Eggs, as much as is sufficient to make it into a Linement.

## CHAP. IV.

*Of Oedema.*

**O**edema is a Tumor beside Nature, arising from Pituitous Matter, white, soft, without pain, often caused by Congestion, than by Fluxion.

*Difference.* ] It is perfect, when it proceeds only from Phlegm: Imperfect, When mixt with other Humors: Thus Oedema, Plegmonodes, Erysipelatedes, Schirrhodes.

*Cause* is Phlegm, sometimes alone, sometimes confus'd with other Humors; for the most part it is produced from the ill disposition of the Lymphæducts.

*Signs* are Whiteness, Softness, yielding to the Fingers, little Pain, and less Pulsation.

*Prognosticks.* ] If an Oedema degenerate into a Scirrus, or Abscess, it is hard of Cure. It is dangerous if a Consumption, or Drop sic accompany it; as also in old people, Phlegmatick bodies in the Winter time, and in all those who with immoderate eating and drinking continually, debilitate the natural heat.

*Cure.* ] This, as the precedent Tumors, requires a good Diet, the Meat and Drink, as also the Air must be moderately hot and dry: Roasted Meat is better then Boyled; Fruit, Cheese, and Fish hurt; as also too great a quantity of Meat and Drink: Wine, either of it self, or altered with h t H. rbs, is good; moderate Exercises of the body before Meals, is as profitable as much Sleep, especially

especially diurnal ; *Costiveness*, *Rest* and *Sadnefs* are Noxious.

*Bleeding* is altogether here unprofitable , and very seldom used ; but *Sweating* and *Purging* very necessary, sometimes *Vomiting* : Always regard must be had to the Stomach.

*To the Tumor it self.* In the beginning we apply Repelling Medicines mixt with Discussives , but so, that the Discussives exceed ; afterwards we use only Discussives , though sometimes stronger, sometimes weaker , according to the Condition of the Disease.

Take Aloes two drams ; Bole-armenick half an ounce ; Acacia, Dragons-blood , Cyperus Roots powdered , of each two drams ; Saffron half a dram, Rose-Vinegar an ounce and half ; Oyl of Mirtles and Earth-worms, of each an ounce ; Wax, as much as is sufficient to make it into a Linament.

*Another stronger.*

Take Crude Brimstone, Ashes of Vine Branches, Sal-Gemme, of each two drams ; Bean-meal two ounces, Vinegar an ounce, Oyl of Nuts a dram , Turpentine, and Wax, as much as sufficeth either to make it into the Consistence of an Oyntment , or Cerat:

*Another yet stronger.*

Take Laudanum, an ounce and half, Frankincense an ounce ; Styrax Calamitis half an ounce ; Brimstone six drams ; Alom, Saltpeter, Ashes, of each two drams ; Cows-dung half an ounce, Oyl of Rue an ounce ; Turpentine, and Pitch, as much as sufficeth to make a Plaister.

*An Excellent Cataplasim.*

Take Roots of Marshmallows, three ounces ;



Bryony, Dwarf-Elder, of each 2 ounces; Leaves of Sage & Rue, of each a handful; Sayin; half a handful; Boil them in equal parts of Wine and Water, in the end, adding of Vinegar three ounces: then being well beat together, add Bean-meal two ounces & a half; Ashes, half an ounce; Cowdung an ounce; Salt half an ounce; Leaven an ounce and half; Oyl of Camomil four ounces; Hoggs-grease, two ounces: Make it into a Cataplasim.

*If it threatens an Abscess*, which rarely happens, this Poulrice is excellent, especially if the Vinegar be omitted, and in its room, Onions, and a quantity of *Unguentum Basilicon* be added.

If an Oedema proceed from a Consumption, Dropsie, or ill habit of body, till those Diseases be cured, that cannot.

I have used often to Cure an Oedema with this *Wine* or *Purging conserve*, and exactly rowling the Arms or Leggs with Rowlers of 12 or 15 yards long, beginning from below, upwards, and so allowing no liberty for the Humor to descend: By this way the Noble parts are Corroborated; the Preternatural Humors Evacuated, and the External Members in a few days space restored to their former condition.

Take Roots of Orrise Floren. an ounce; Sea-holly and Fennel, of each half an ounce: Rheubarb, Agarick, Trochis. of each three drams, Senna, six drams; Cinnamon two drams; Cloves half a dram. *Sem. Siler. Mont.* two drams: tye them in a Cloth, and let them infuse in two pints of old White-wine, then take every morning four or five ounces for a Dose.

Or,

Take of Electuary of Juice of Roses, an ounces  
Jalappe, a dram; Spirit of Salt ; a scruple; Mix it in  
an Electuary.

Let the Patient take the quantity of a Bean, or  
Hazel-Nut every third or fourth day.

## CHAP. V.

## Of Scirrhus.

**S**cirrhus is a Tumor besides Nature, sometimes  
generated of Tough, Viscous Phlegm; sometimes of  
Melancholy, hard, not yielding to the touch, nor pain-  
ful.

*Differences;* It is perfect when sprung from Me-  
lancholy, or Phlegm alone: Imperfect, when o-  
ther Humors are unnaturally mixt with it.

*Cause,* is Melancholy, or tough Phlegm.

*Signs,* a great hardness, void of pain, of a white  
colour, if from Phlegm; if from Melancholy, Li-  
vid.

*Prognostick.* ] A Scirrhus, where there is no  
pain, and upon which the hair grows, is alto-  
gether incurable, and if Livid, it is very danger-  
ous, and often degenerates into a Cancer: An  
imperfect, small, and painful one, by means  
sometimes ( although very rare ) may be cu-  
red.

*Cure* ] If the Scirrhus be produced from  
Phlegm, the same manner of Diet is to be obser-  
ved as in an Oedema; but if from Melancholy,  
you must choose a clear Air, moderately hot, and

moist; the Meat of the same quality, and of easie Digestion; all sharp things, and those that are hot in the third or fourth degree, hurt: Let the *Drink* be neither thick nor strong, but warming: *Sadness, Anger, Cares, Venery*, much *Sleep*, hurtful; but moderate *Exercises* very necessary.

*Bleeding* is scarce ever administred with any success, but Sweating, and Purging with great.

Amongst the *external Remedies* are *Discussives* and *Emollients*; but the whole course of the Cure, that must be mixt, now increasing the quantity of the one, then of the other.

To use *Suppuratives* in this case, is a thing of a very uncertain Cure.

There are those which try cutting out, and burning, but too confidently, except contained in a proper Tunicle, and then the name of *Schirrhus* is ill attributed to that Tumor.

#### *Emollient Medicines.*

• Butter, the fat of Hens, Geese, Ducks, Hogs, Foxes, Bears, Mans: Mallows, Marsh-mallows, Orrach, Gums, Ammoniacum, Galbanum, Edelium, Stryax, Liquida; Oyntment of Marsh-mallows; Plaisters of Diachilon, of Mussilages, and Mellilote.

Resolvents are set down in the Chapter of a Phlegmon.

Take Gum, Galbanum, Ammonianum, Opponax, of each an ounce; Flower of Brimstone, Red Myrrhe, of each half an ounce; Camphire, a dram; Oyl of White-Lillies, Ducks-grease, of each six drams; Wax, as much as is sufficient to make it into a Plaister.

Take Roots of Marsh-mallows, three ounces,  
Orriſe,

Orriſe, an ounce; Leaves of Colworts, Pellitory of the Wall, Mallows, Flowers of Camomile and Millilote, of each a handful; Linſeed two ounces boil them in Water; and being well beat together, add to them Horſe-dung two ounces; Hoggs Greafe, Oyl of Camomil, of each an ounce, boil'd Onions half an ounce: Make a Cataplaſm.

## CHAP. VI.

### *De Tumore Aquoso, or, Watry Tumor.*

**T***umor Aquosus* is a Collection of a Watry Humor in the whole body, or in ſome one part; ſoft, and without pain, yielding to the Fingers, but ſuddenly returning.

*Difference.* Sometimes the whole body is ſwel'd with Water; which Tumor is called *Anafarca*; ſometimes the lower Belly only, or with the Leggs, and then it is called *Aſcites*; if Wind, mixing with the water, extends the Belly like to a Drum, it is called *Tympanites*: Theſe are three kinds of Dropsies, whoſe Cure rather appertains to the Phyſician than Chirurgion; Water Collected in the Head, is call'd *Hydrocephalus*; in the Breſt, a *Dropsie of the Lungs*; in the Navel, a *Hydromphalus*; in the Cods, *Hydrocele*. —

*Cauſe* is Serum, to wit, Salt water, produced from the loſt heat of the parts that ſerv'd to Sanguification, and Chyliſication.

*Signs*; This Tumor is ſofter then Oedema, and more yielding to the Fingers, without pain, with ſome itching, and if you look on it by Candle-light, very ſhining.

*Prognostick.* ] Watry Tumors are not dangerous, which proceed not from a Depravedness of the Viscera, yet all are of difficult cure, especially those in and about the Joynts.

*Cure*; Diet is here the same as in Oedema; All salt things, indurated with Smoke, and too great a quantity of Drink, are very hurtful; as also Spirit of Wine and Pepper; otherwise hot and dry *Aliments* are best.

*Purging* is very necessary, provided it be not too great, lest the parts already weak, are more weakened; provoking *Sweat* and *Urine*, here are very profitable.

*Bleeding*, by experience I know it, to be hurtful to all Hydropick people.

*Medicines Purging Water.*

Take Roots of *Asarum*, Dwarf-Elder, Jalap, white Mechoacans, Leaves and Bark of Elder, Euphorbium, Turbith, Gum Gutta, Syrrup, and Species of Diacarthamum, Cream of Tartar.

Take Syrrup of Rofs solutive, with Senna, Diacarthamum, of each an ounce; Jalap eight grains, Cream of Tartar two scruples, Parsley-water, as much as is sufficient to make it into a Potion.

*A Purging Wine which Cures the Dropsie itself.*

Take Roots of Gentian, Orrise, Succory, Fennel, Masterwort, of each an ounce; the middle bark of Elder, an ounce and half; Leaves of Ground-pine, a handful; Rosemary two pugils; Flowers of Centaury the less, one pugil; Seeds of Smallage, Coriander, Carraway, Roman Nettle, Fennel, of each a dram; Senna 12 drams; Agarick three drams; Jalap an ounce; Turbith, a dram and half: let them be cut, and infused in six pints of Rhenish-wine: Dose four ounces,

*Medicine.*



*Medicines Consuming water outwardly used.*

Take Roots of Orrise, Bryony, Birthwort, Flowers of Elder, Camomil, Leaves of Celandine, Centaury, Calamint, Rue, Dill, wild Marjoram, Sulphur vivum, Salt, Alom, Bay-berries, Ammoniacum, Bdellium.

Take Cows-dung half an ounce, Pigeons-dung two drams, Sulphur vivum, half an ounce; Nitre two drams, Honey, Vinegar, of each an ounce and half; Bean-meal two ounces; Bay-berries, Cumminseeds, of each half an ounce; Oyl of Dill, Nard, of each an ounce; White-wine, as much as is sufficient to make it into a Poultice.

Take Frankinsence, Mastick, Myrrhe, of each half an ounce; Camphire, half a dram; Goats-dung an ounce and half; Brimstone, Salt, Cummin Seeds, of each three drams; Turpentine and Wax, as much as sufficeth: according to Art make it into a Plaister.

*Hydrocephalus* is always of difficult Cure; Water contained in the *Ventricles* of the Brain, or between the Brain and *Meninges* is very dangerous; but less dangerous, when collected between the *Dura* and *Pia Mater*, or between the *Dura Mater* and the Skull; For the *Dura Mater* may be divided with a Lancet, if you can come at it; but least danger of all, when detained without the Skull.

Purgings Sudorificks and Diureticks seldom do any good here, but *Cauteries*, *Blisters*, *Issues*, *Scars* are more profitable: But sometimes we are forc'd to come to Incision or Ustion, which Remedies although dangerous, have Cured several.

Some Chirurgions use with an Actual Cautery to burn the Skin of the Head in five, six, or more places:

places, but not together and at once, but at several times, lest the Patients strength should be too much spent, continually choosing that place, which the watry Humor makes, to appear most convenient.

Some with a Lancet open the skin neer to the Sagital Suture.

Which of these Remedies are best, cannot absolutely be declared. I much esteem an Actual Cautery, when the Water is between the Skin and the Skull; but if under the Skull, between the Meninges, I do not see how this Operation can be performed without a Lancet.

But which of them soever you chuse, have a care of discharging all the Water at once, for in the very Operation it self the Patient dyes, or at least is very much debilitated; for till the end of the Cure, all the Water is not to be taken away, lest the Debilitated Parts deprived of that heat which the Water posselt, do corrupt: but rather what remains must be consumed by Internal and External Discussives; and this is to be observed in all Watery Tumors that are Cured by a Paracentesis.

In the same manner the *Watry Tumor* in the *Navel* and *Cod* ought to be handled, after other Medicines have been applied in vain.

*Dropfie of the Breast* belongs not to Chirurgery, except where a Paracentesis is convenient; concerning which, Read the 15th Chapter of the first part.

## CHAP. VII.

*Of the Flatuous, or Windy Tumor.*

**T**He *Flatuous Tumor* is a Disease produced of Wind, not yielding without resistance to the Fingers.

*Difference.* Some are without pain, others with it; in the one, the wind is in motion, in the other, quiet.

*Causes of Wind,* are Phlegme, especially when mingled with Choler, which, as Ferment doth froth, so it produceth wind; it always happens upon a debility of the Parts, by reason of which, although endeavouring to concoct the Humors, yet are notable.

*Signs* are an Inflation, with a resistance yielding to the Fingers, a rumbling noise, especially if shaken.

*Prognosticks.* ] It seldom comes in Flethy parts; in other parts it brings many inconveniencies, in weak and Cacochymick bodies, it's of difficult and tedious Cure.

*Cure.* ] The same Diet is here to be observed as in an Oedema: Pease, Beans, Turnips, Chestnuts, and all Crude Fruit do extreamly hurt; On the contrary, Wine, and other things moderately warming, profit; as also Spices, and those things which disperse Wind, as Nutmegs, Mace, Anise, Carraways, Lovage.

The Stomach, and the whole Body require  
Purging

Purging and Corroborating Medicines, always mixing with them those that disperse Wind, and sometimes also where Corroboratives are used, *Anodines Laudanum, Opiatum* cautiously used (that is, half a grain, or a grain for a Dose) is here excellent; for besides, that it ceaseth pain, it also by its Diaphoretick quality removes the Cause of the Disease: to cause Sweat, is as necessary. as Bleeding is unnecessary.

*Outward Medicines discussing Wind.*

- o Take Roots of Galangale, Lovage: Herbs, Dill, Mint, Marjoram, Peniroyal, Rosemary, Rue, Chervil: Flowers of Elder, Mellilote, Camomil: Seeds, Anise, Carraways, Cummin, Fennel; Nutmegs, Cardamum, Castor: Oyl, of Rue, Nard, Spike, Dill, Carraway distill'd; Mace, Nucista, exprest and distill'd, Millilote Plaister.

Take Oyl of Wormwood, Rue, of each two drams; Oyl of *Nucista* exprest, one dram; of Mace distilled, half a dram; Castore, dissolved in *Aqua vite*, two Scruples: Make it into a Linament.

Or,

Take the Leaves of Rue, Calamint, of each half an handful; Bean-meal, two ounces; Seeds of Cummin and Anise, of each half an ounce; Bayberries, Salt, of each three drams; Nitre, Brimstone, of each a dram; Goats-dung, six ounces; White-wine, as much as is sufficient: Mix them, and boyl them into the consistence of a Cataplasm.

Or,

Take the Roots of Pellitory of Spain, half a dram; Venice-Sope, three drams; Castor dissolved in *Aqua vite*, one dram; Seeds of Cummin, Carraways,

Carraways, of each two drams ; Ashes of Earth-worms, half a dram ; Oyl of Spike, half an ounce ; Mastick, three drams, Wax and Turpentine, as much as sufficeth : Make it into a Plaitter according to Art.

## CHAP. VIII.

*De Herpete.*

**H**erpes is a Tumor besides Nature, sprung from yellow Choler, disfiguring the skin with corroding and spreading Pustules.

*Difference.* ] Where only Choler is the cause of the Disease, it produceth a *Corroding Herpes* ; but where Phlegm is mixt with Choler, a *Herpes Miliaris*.

*Cause* is sometimes Choler alone, sometimes mixt with Phlegms and I see not why the serum of the Blood may not often be looked upon as a cause: For the Lymphaducks being out of order, do produce mutations in mans body ; heretofore unknown.

*Signs.* ] Are little Pustles, like to Millet-seed ; a heat, itching, and after rubbing, a moistness, and little Ulcers.

*Prognosticks.* ] *Herpes* is of difficult Cure, but of little danger ; unless so rendred by the immoderate use of repellents.

*Cure.* ] The same Diet is to be prescribed , as in an Erisipelas. Moreover, *Purging* is here very necessary ; *Bleeding* not to be allowed of ; the use of *Baths* is excellent, and their waters taken at fit times,



times, safely Cure this Disease: *The Decoctions of China, Salsa, &c.* also benefit much.

*Outwardly.* ] Fasting-Spittle oftentimes doth good, because if it should be repelled to the Internal parts, it causeth a Feaver, and other ill Symptoms.

o VVith great success many times, have I seen applied the Pouder of *Lapis Scissilis*, mixt with Vinegar; some use Mustard boy'd in Butter; to which they add some Gunpowder. Lye also, and Urine have helpt many; *Unguent. Fuscum*, of *Felix Wurtz* is excellent here; as also the following Plaister.

Take Sarcocols, Crude Brimstone, of each two drams; Mastick, Frakincense, *Lapis Calaminaris*, of each half an ounce; white Troches of Rhafis, Litharge of Gold, Myrrhe, of each three drams; Goats Suet, half an ounce; VVax and Turpentine, so much as is sufficient to make it into a Plaister according to Art.

Take the Powder of Chalk mixt with Cream, and anoint the part, fomenting it before with the hot Lees of White-wine.

*In a rebellious Herpes.*

Take the brown Oyntment of *Felix Wurtz*, three drams; white Oyntment with Camphire, one dram and half; Ceruse, Brimstone, Mirrhe, of each a dram; Litharge a dram and half; *Mercurius dulcis*, Verdigreate, of each a scruple and half; Oyl of Roses, as much as sufficeth: make it into an Oyntment.

Or,

Take *Lapis Prunella*, one dram; Flower of Brimstone, half an ounce; Salt of Saturn, a dram and half; old Oyl of Rape, as much as sufficeth to make it into a Linament.

CHAP.

## C H A P. IX.

*Of Atheroma, Steatoma, and Meliceris.*

**A**theroma is a Tumor besides Nature, contained in a proper Cist, caused from a Humor like to Pap of sodden Barley, without pain, of the colour of the skin, not yielding to the fingers, nor when they are removed, suddenly swelling out again.

Steatoma is a Tumor besides Nature, contained in its own proper Vesicle, caused from a Matter like to Suet, and of the same colour, soft, from a small beginning, by degrees increasing, difficultly yielding to the Fingers, but they being removed, returning again to its former greatness.

Meliceris is a Tumor besides Nature, included in its proper Tunicle, engendred from a Humor, like to Honey, without pain, round, easily yielding to the Fingers, which being removed, returns again to its first Figure.

Differences. ] This Matter like to Honey, Suet, or Pap, if gathered about the Joynts, is called a Ganglion; if about the Glandules of the Neck, a Glandula, Scrophula, or Struma; if in the Arms, Leggs, or Head, *Tuberculum*, if from the Pox, *Tophus*.

Cause of these Tumors is Pblegm, but more in the one, than in the other, receding from its Natural Constitution; and sometiues, but very seldom, mixt with Melancholy.

Signs are declared in their Definition.

Prognosticks. ] They are scarce ever cured, but by Manual Operation: If the Vesicle be broken,

OR

or not all taken out, there remains a Fistula, or a foul Ulcer: The Cure of which will be both difficult and tedious.

*Cure.* ] They are sometimes, but very rare, removed by strong Resolvents: I have Cured some with Balsom of Peru; some use Oxicroceum Plaister, or the following:

Take *Laudanum* an ounce; Red Mirrhe, three drams; Camphore a dram: Mix them; and make it into a Plaister according to Art.

*Another.*

Take Gum *Sagapenum Ammoniacum*, of each half an ounce; Roots of Pellitory, *Euphorbium*, of each a scruple and half; Brimstone three drams; Oyl of Amber a dram: Make it into a Plaister.

If it break, and the Matter discharge out of the Tunicle, then must you use Corrolives, for other Medicines are too weak.

*Corrosives, and Catharticks.*

Take Roots of black Hellebore, burnt Galls, burnt Date-stones, Verdigreese, burnt Alom, Quick Lime, Vitriol, Mercury Sublimate and Precipitate; Spirit and Oyl of Vitriol, Spirit of Salt; the Liquor of Tartar; Oyntments of *Aegyptiacum Fuscum* of *Felix Wortz*; Ashes of Oake, and Vine-branches.

Some use Arsnick, and Orpment; but they are not used but with the greatest danger in those places, known by Anatomy, under which the Nerves, lye; to the Skin, and Carnous Excrescencies, they may be applyed with the less danger.

*The following Oyntment will suffice.*

Take Vitriol well sweetned, a dram; Verdigreese, a scruple, Oyntment of *Aegyptiacum*,  
half

half an ounce: Make it into an Oyntment.

If they tend to suppuration, which is very seldom, let the Surgeon assist Nature with Maturatives; but the safest Method of taking away these Tumors, we have shewn in the 12th Chapter of the first Part.

## CHAP. X.

### Of Scrophula, Struma, or Kings Evil.

**Struma**, or **Scrophula**, are Tumors besides Nature, contained in a peculiar Membrane, from a Melancholick, or Pituitous Humor; shewing themselves in manner of Tubercles in the Neck, and adjoining parts.

*Difference.* ] They are sometimes movable, sometimes more fixt; sometimes but one, sometimes many.

*Cause* is Melancholy, or Phlegm, or both mixt together.

*Signs.* ] Are Hardness, Inequality, void of pain.

*Prognostick.* ] The Tumors are of long and difficult Cure; especially if many, or fixt; they threaten danger, as soon as they grow painful; and much more if Cancerous, or if joyned to any great Nerve or Vein; sometimes they are Hereditary, and sometimes peculiar to such a Region or City; when Cured, they for the most part leave behind them an ill Cicatrix: where the Recurrent Nerve is divided, the Speech is lost, and oftentimes Life it self.

114 *Of Scrophula, Struma, or Kings Evil.*

*Cure.*] Diet must be here the same, as in Oedema, or Scirrhus.

*Purging* is necessary, but not *Bleeding*; provoking sweat, by the same way and means as in the *French Pox*, effects much; it alone cures the *Kings Evil*.

Sometimes they are consumed by Internal Remedies that have appropriated qualities of curing *Scrophula's*.

*Such are these:*

Roots of round Birth-wort, Briony, Sow-Bread, Dropwort, Devils-bit, Orrise, Pimpennel, Pellitory of Spain, Squills, Vervain, Figwort, Leaves of Cypress, Bawme, Rue, Savory, Flowers of Broom, Burnt Crabs, burnt Eggs-shells, *Sal Gemma*, Spunges.

New Spunges are much commended, if boild in Ale, drinking thereof three or four times a day: or Calcined, and taking half a dram of the Powder Morning and Evening: The following Powder is likewise very much praised.

Take the Ashes of Sea-spunges, *as Sepia*, Long Pepper, Cinamon, *Sal Gemma*, Pellitory of Spain, Cypress Nuts, Galls, Red-roses Leaves, of each half an ounce; Make a Powder. Dose, two scruples, or a dram.

Or,

Take of Spunge-stone, three drams; *Sal. Gemma*, two drams; Salt of Tartar, a dram: Make a Powder. Dose, two scruples, or a dram.

*Outwardly Resolving and Emollient Medicines*, are apply'd; which if they effect it not, then use *Suppuratives*: when 'tis suppurated, it is to be cured as a Malignant Ulcer.

But if the above named Medicines signifie nothing,



thing, then we come to Corrosive Medicines, and to the Incision Knife.

*An Excellent Resolving Emollient Plaister.*

Take Gum, *Galbanum*, *Ammoniacum*, *Bdellium*; of each half an ounce : Bay-berries, Stavocre, Pelitory of Spain, Cummin, of each six drams ; Pigeons-Dung, a dram ; Goats-dung, three drams; Hoggs-grease, an ounce and half ; Oyl of Camomile, an ounce ; Wax, and Pitch ; as much as is sufficient to make it into a Plaister.

*A Linament that stops the Flux of Humors, and oftentimes wholly Cures the Kings Evil.*

Take Oyl of Mirtles and Bayes, of each half an ounce ; Oyntment of Martiaton, an ounce, Quick-silver extinct with Flower of Brimstone, six drams : Make it into an Oyntment.

Let the Scrophula be anointed with it twice a day, and if they are not consumed, at least they will be diminished : but the Chirurgeon must look into the Patients mouth each day, lest upon the continual use of Mercury, there follows a Flux, which causes a swelling of the Tongue and Jaws : The Plaister of Froggs, with Mercury, is likewise good here.

Or,

Take Gum, *Caranna*, an ounce, crude Mercury extinct in Turpentine, three drams : Make a Plaister.

If the Tumor be painful, there may be added to this Plaister a dram of *Opium*, which hath the virtue of resolving and easing pain, and is not cold, but hot.

Suppurating Medicines are set down in the second Chapter : and Corrosive in the foregoing Chapter.

In Suppurated and opened Scrophula's, this Linament is much esteemed.

Take Oyl of Bayes, Ceruse powdred and allayed with *Aqua vite*, of each an ounce; Roch Alom, half an ounce; Salt, two drams: Make it into an Oyntment.

## CHAP. XI.

### Of Bubo.

**B**ubo is a Tumor ( besides Nature ) of the Glandules, from impure Blood, Red, Painful, and  
 + Hard.

*Difference.*] Where little, and not painful, and easily brought to Suppuration, 'tis called *Phyma*; but where there is more of Choler in it, *Phygeton*; in the Armpits, *Panus*; behind the Ears, *Parotis*: The one *Malign*, or *Festilential*; the other *not*; sometimes contracted from unchast embraces, then 'tis called a *Venereal Bubo*.

*Cause* is Blood, never alone, but alwayes mixt with some other Preternatural Humor.

*Signs*, are redness about the Glandules, pain, heat, tension, hardness, Pulsation, and sometimes a Fever.

The Liver and Spleen, according to the Opinion of the Ancients, discharge themselves into the Groins; the Breast and Heart, to the Armpits; the Brain at the Glandules of the Ear; but now far other use is attributed to the Glandules. Of which there are several Tracts written, and we shall speak of it in another place.

*Prognosticks.*] The Bubo that is not *Malign*, is  
 not

not dangerous, except it be long in discussing, or suppurating, and then fear lest it Fistulate: In the Armpits it's sooner brought to maturity, than in the Groins; and heal sooner then behind the Ears: On the contrary, a *Malign* is for the most part a sign of suddain death, although all outward signs may appear well.

The *Venercal* is not mortal, but of hard Cure, and almost always precede the Pox; chiefly by Bleeding, or the use of repelling Medicines; the matter is returned from the External, into Internal Parts.

*Cure.* ] Diet the same as in a Phlegmon: In a *Benign*, *Purging* is necessary, provided it be not with too strong Medicines: *Bleeding*, except a great Fever, or a Plethora require, I admit no more of it here, than of *Repellent Medicines*; for 'tis unseemly that Natures assister should return that into the Interiour parts, which Nature her self did eject (which for the most part is Critical) *Sweating* in all *Buboes*, profits much: *Scarification* hath no place here, except in Malignant, nor *Leeches*, but where very much inflam'd.

*Externally*, the Cure is to be managed so, that the Humor may be dissipated with *Resolvents*, which by reason of the frigidity of the *Glands*, are required the stronger; adding also *Attractives* to them, for in all, I suspect lest the Matter be not perfectly thrown forth: But in a painful *Bubo*, 'tis first necessary to ease the pain, before you come to any other Medicines.

*In extream pain,*

Take Muffilages of the Seeds of Fleawort, an ounce and half; the Yolk of an Egg, Saffron, a dram; Fresh-butter, half an ounce: Make it into a L inament.

Or,

Take Leaves of Mallows, an handful ; Meal of Marsh-mallow Roots , and Fenugreek-seeds, of each two ounces ; Barley-meal, an ounce ; Ducks-grease, Oyl of Dill, of each half an ounce : Boyl them in Milk, to the consistence of a Cataplasme.

Resolvents are above described ; Attractives shall be presently set down.

If it yield not to discission, Suppuration is to be endeavoured ; which is of all , the safest Method : being suppurated, let it forthwith be opened ; but rather by Incision, then Cautery : And so let it be kept opened until the whole Tumor be dissolved.

In *Children*, for the most part, we commit it wholly to Nature ; only prescribing a good Diet , and forbidding the often touch of the part affected with the hands : or we apply the Plaister of Diachilon, or of Mussilages. 'tis also often Cured by the only using of Oyl of Olives, Rape, Camomil, or White-Lillies.

In a *Pestilential Bubo*, neither Bleeding or Purging ( whatsoever others say ) must be used : Sudorificks, and Refrigeratives are convenient ; outwardly *Attractives* in the beginning are necessary.

#### *Attractives.*

Take Roots of Aron, Eriony, Birthwort, Pelitory of Spain, Dittany, Cresses, Virgins-Flower, Leeks, Nettles, Garlick, Onions, Figgs, Mustard, Gums , *Galbanum* , *Ammoniacum* , *Exphorbiu* , *Succinum*, *Cantharides*, Castor ; Ox-gall , Pigeons-Grease, and Goats-dung ; Quick-Lime , Nitre, Brimstone ; Leaven ; Black-sope ; Plaisters of *Diachilon*, *Oxicroceum*, Thereacle, Mithridate.

Take

Take Roots of Marsh-mallows, an ounce; Onions two ounces; Elder, and Camomil-flowers, of each a pugil; Figgs, N<sup>o</sup>. xij. Fænugreek-Meal, two ounces; Pigeons-dung, two drams; Thereacle, three drams: Make a Cataplasme.

Or,

Take Roots of Pellitory of Spain, Mustardseed, of each two scruples; Salt, two drams; Treacle, three drams; Gum *Ammoniacum*, Dissolved in Vinegar; as much as sufficeth to make a Plaister.

Many take a Hen, or Frogg, divided in the mid'st, and apply them warm to the affected part, often changing them: Some apply to the Part the Breech of a live Hen, or Pigeon, the Feathers being pulled off: Others take away all by Incision, which is very dangerous, and not to be permitted: but they proceed best, who forthwith in the very beginning apply a Visicatory to the *Bubo*; then the following Morning or Evening open the Blister, and afterwards dressing it with Attractives. This is of great use, and of much esteem.

Take the Plaister of *Diachylon* with Gums, of Mustilages, of each half a pound; Oyntment of Basilicon, four ounces; Mustard-seed, three ounces: Make a Plaister. More of the Cure of a *Bubo*, look in our description of the Plague.

In a *Veneræal Bubo*, you must neither Bleed nor Purge, as long as there remains any hope of Curing it by External Remedies, lest the Malignant Humors, which Nature threw out, should be returned again into the body, and so occasion the Pox: But Suppuration is to be endeavoured by all means, and the least Suppurated Tumor



forthwith ; yea, although the Matter be not perfectly Concocted, be opened ; if it is tough, as for the most part 'tis, *Attractives* are to be applyed, especially Cupping-glasses : They not being sufficient, when the whole Mass of Blood is infected, the Cure of the Pox is to be prescribed ; often using this following Purging Decoction.

Take Roots of China, Sarsaparilla, of each three ounces ; Pollypody, an ounce ; Bark of *Guajacum*, three ounces ; Senna, two ounces ; Agarick *Trochiscatum*, two drams ; Cinamon, two drams : Infuse in a sufficient quantity of Water over the fire for 24 hours, then boyl them to three quarts, and to the strained Liquor, add Syrop of Roses, Sol ; with Senna, four ounces, mix them. Dose, six or eight ounces.

Some make this Decoction with stale Beer, or Wine ; but in these things the Surgeon ought to consider the past manner of living of his Patient, his Temperature, and Age : If you desire that it purge you more, you may add a dram or two of *Trochise Albandal* ; and if not strong enough, then you may mix with it five or six grains of White *Precipitate*, provided strength gives leave.

## C H A P. XII.

*Of the Carbuncle.*

**A** Carbuncle is a Tumor besides Nature, from Adust Blood, corrupting the Part where 'tis collected.

*Difference.* ] 'Tis called by the Greeks, *Anthrax*; by the Latins, *ignis Persicus*; by the Germans, *Een Kool*: Some endeavour a difference between an *Anthrax* and *Carbuncle*, but lose their labour: There is no other difference, but sometimes it is bigger, sometimes lesser, sometimes more Malignant, other times less.

*Cause* is adust Blood assuming the nature of black Choler, and so apt to putrefie.

*Signs* are, sometimes but one great Pustule, sometimes many little ones; which being opened, appear black, and all about inflamed: the Crust being removed, instead of Matter, you find spongy flesh; the Part affected is very painful; a Fever present, and watchings.

*Prognosticks.* ] Very dangerous, when black, especially in a Plague time, when near to a principal Part, if great, and suddenly vanishing.

*Cure.* ] Strong Purging Medicines I much mistrust, *Glisters*, or loosening Medicines will suffice; viz. *Cassia Fistula*, *Manna*, *Tamarinds*, *Cream of Tartar*, &c. but more suspicious to me is *Bleeding* to fainting (as *Galen* writes) and in its room, *Leeches*, or *Cups*, with Scarrification will be sufficient: But I rely most upon *Sudorifick*, and *Re-*  
fry-

frygerating Medicines ; using outwardly the same Medicines as in the Plague.

This Plaister is much commended, to make a *Separation of the Eskar.*

Take old Threacle, Mithridate, of each half an ounce ; Leaven, Turpentine, of each two ounces, Honey of Roses, an ounce and a half ; Fresh-butter, two ounces ; White Vitriol, an ounce ; Soot, two ounces and half ; Black-sope, three ounces ; Saffron, three drams ; Yolks of Eggs, No. iij. Mix them, and make a Plaister according to  
+ Art.

The External Medicines ought often to be changed : Here is no need of *Suppuratives*, for the Humors are easily corrupted of themselves ; in the place of which, the Eskar being separated, may be used *Ung. Fuscum* of *Felix Wurtz*, *Ægyptiacum*, and Honey of Roses, &c.

## C H A P. XIII.

### Of a Cancer.

**A** Cancer is a Tumor besides Nature, sprung from black Choler, round, hard, livid, painful, full of turgid Veins, resembling the Feet of a Crab.

*Difference.* ] Where not Exulcerated, by the Greeks it is named *Carcinoma* ; when Ulcerated, *Plagedena*, by the Greeks, and by the Germans, *De Wolf*.

*Signs* ; In the beginning difficultly known, scarce equalling a Pea in bigness ; then sometimes increasing suddenly, sometimes slowly ; it makes  
it

it self, by its grievous Symtoms, easily enough to be known: The Tumor is hard, painful, hot, livid, or black, round with some inequality, full of swell'd Veins.

*Prognostick.* ] A Cancer is seldom Cured by Medicines, often by Chirurgery, but not without danger: Sharp Medicines Exulcerate it: It is imprudence to attempt an Occult Cancer, or that is detained in any Cavity of the Body, except it be very little, and may easily be taken away by Incision.

*Cure.* ] Diet the same as in *Scirrhus*: frequent *Purging* convenient; be cautious in *Bleeding*, as also in *Scarrification*. The Moneths flowing in Women, and in Men the Hemorrhoids, are very beneficial.

Externally Suppuratives, and strong Discutients are hurtful; the following good.

*Medicines in a Cancer.*

Take Roots of *Arum*, Dropwort, Gentian, Figwort, Mullein: Leaves of Maidenhair, Housleek the greater, Agrimony, Tobacco, Plantain, Nightshade, Hounds-tongue, the Spawn of Frogs, of Whales, Burnt-crabs, Burnt-lead, Mans-dung, Plaisters of *Dispompholigos*, of Lead, *Diafulpharis*, of Frogs with Mercury, Sugar of Saturn, Camphire.

*For a Cancer not Ulcerated,*

Take the Juice of Plantain; Endive, Housleek the greater, Nightshade, Rose Vinegar, Oyl of Mirtle, of each an ounce; Venice Turpentine, two drams: Stir them together in a Leaden Morter, with a Leaden Pestle; adding of the Rinds of Pomgranates, and Citrons, of each a dram; Bole-armenick, Burnt-lead, Camphire,

of each half a dram : Make it into a Linament.

★ *For an Ulcerated Cancer.*

Take Galls, Pomgranate-rinds, of each half an ounce ; Burnt Talk, an ounce ; Bole-armenick, half an ounce ; Burnt-Lead, two drams ; Ashes of Crab-shells, a Dram ; Turpentine, and Honey, as much as is sufficient : make an Oyntment.

By the use of these, or the like Medicines, Cancers that are not Ulcerated, have been often Cured ; and Ulcerated Cancers have been for many years kept in the same condition ; But for the most part, the business is committed to Chirurgery : The part affected being held by a pair of Forceps, is to be cut off by the help of a convenient Knife, but so that nothing of the Cancer be left behind, lest it bud afresh ; others holding it only with their left hands, or passing a string quite cross, take it off by Incision.

Many with great praises extol prepared Arsnick, or Mercury sublimate, but its deeds answer not their words ; its preparation John Faber in his *Myrotheico Spargirico* teaches.

The Quintessence of Arsnick.

Take Christalline, Arsnick, with the like weight of Salt-Peter, and reduce all into the finest Alebooll, and put them into a very strong Glass Retort, to which joyn a Recipient, big and large enough, being well luted together, Distill them with Embers, observing the degrees of the Fire, at first gentle, at the end very strong, and violent, untill all the Spirits of the Arsnick, and Salt-Peter are gone forth : They being come forth, and the Vessels cold, disjoyn the Recipient



ent from the neck of the Retort, having great care of the Spirits that are within, which are venomous; suddenly stopping the mouth of the Receiver with a strong lute, afterwards breaking the Retort, and that which is in the bottom, must be powdered, and put into a new Retort, and upon the powder that is put into the Retort, the Spirits of Arsnick which was in the Receiver is to be poured, and distill'd again, being luted well, as at first: This to be done three or four times, till the Arsnick be well Calcined with the Salt-Peter; then lay the Arsnick upon a strong Tile, and for a whole day make a strong fire about it; so that which could not be Calcined by Distillation, may be Calcined and burnt by an open Fire: this Calx of Arsnick is to be dissolved in Distilled Rain-water, and the Solution so cleansed and depurated from its Terrestrial Excrements, and by filtering made clear and limphide, is to be evaporated and dried, and calcined again with a very strong fire, until it emits no feces in the solution, but the whole Calx is dissolved, and the Water remains most clear and limphid; then the Water being Evaporated, it is to be dried. Then lastly, its above reserved Spirit is to be poured upon it, and mixt with it; but first it ought to be seven times rectified: You must make this Conjunction in a Matrace (a Glass Vessel so called, by reason of its roundest in the bottom, and long neck) and in a warm Balneum, till the Calx hath imbibed its Spirit; then in a Glass Alembick, you shall separate by Balneum, whatsoever of watrish Humidity can be separated, and there will remain in the bottom, the buttery Calx of Arsnick, of great Vertue, which must be kept in a Glass Vessel well stopt.

Take some of this Powder, mixt it with  
Ba-

Basilicon, or a Digestive; and thus mixt, apply to the Ulcerated Cancer.

## C H A P. XIV.

### Of a Gangrene and Spachelus.

**A** Gangrene is a beginning-mortification of the soft parts of the Body, most commonly following a great Inflammation, or ill Cured.

*Spachelus, Necrosis, Syderatio, is a perfect Mortification of the soft and hard parts.*

*Differences* In a *Spachelus* the parts are altogether dead; but in a *Gangreen*, they begin but to dye, and the sense is not perfectly abolished; there the Skin is first Pallid, suddenly Livid, then Black; here in a manner red: greater stink in that, than in this.

The *Causes* of both are six; 1. The External cold of the Air, or Repelling Medicines. 2. External heat, from burning, or use of Corrosive Medicines. 3. A defect of Nutriment, as in an Atrophia, either by the Compression, or Obstruction of the Vessels, by reason of which straightness the Blood cannot pass to the part. 4. The stopping of the Pores, or Perspiration bindred, from whence comes a Suffocation of the Natural heat. 5. Malign Humor, either begotten in the Body, or contracted from venomous Beasts, or Medicines. 6. The Scurvy, which by a peculiar property, causeth the parts sometimes to mortifie.

*Signs.* A *Spachelus* is easily to be known, the part looks back: Spungy flesh, sense, heat, and Pulsation abolisht.

But

But the Signs of a Gangreen vary according to the variety of the Causes: If contracted from cold, a great pricking pain is felt in the affected Part; First, 'tis red, then pale, at length black: The Natural heat by degrees is extinguished, and there happens a shaking, not unlike that in a Quartain Ague.

If caused from an External heat, or stopping of the Pores, the Redness is changed into White, then into Black; Pulsation and Pain cease: The Senses lessened; and at last there appear some Pustles, from whence issue a gleety Humor.

If from defect of Aliment, there is neither Pain, Inflammation, or Tumor; the Body waxeth cold, and for the most part seizeth upon the Joynts.

If from a venomous Creature, or Humor, great pain, and a Fever alwas accompany it; frequent faintings, and oft-times Deliriums: Here ariseth a Pustle, under which appears a black spot, which spreads it self over the whole Part.

If from the Scurvy, it for the most part begins at the Toes, or shows it self outwardly with blackish spots and lines, which degenerates into a dry Crust, upon which follows a numbness of the Part, and at length a mortification it self, without any stink: Sometimes without pain, other-times very great, especially in them that are given to passion, or sadness.

Prognostick. ] Except a Gangreen be suddenly stopt, degenerates into a Spachelus: Easier Cured in Young than Old people: The Humors continually flowing to the Part affected, bring danger with them, and that very great, if they are Malignant: In the Cavities of the Body, to wit, in the Mouth, Privy-parts, and Fundament, &c.

a Gangreen is always difficult of Cure, as also that which happens among the Nerves and Tendons; in Hydripiiks always mortal: That which happens from the Scurvy, may be spun out for many Moneths, but seldom Cured.

A *Sphacelus* is not Cured but by the Knife and Fire.

*Cure.* ] Diet must be good; the Air, Meat, and Drink generally cooling and drying: But seeing the Causes are various, we leave it to the Physician to prescribe what is convenient; who also must well distinguish concerning *Bleeding* and *Purging*, when to be used with advantage, or disadvantage. Sudorificks and Cordials are of great use here, and because that in this, and others Diseases they are often used: I thought it convenient to set them down in this place.

*Diaphoreticks, or Sudorificks.*

Roots of *Angelica*, *Scorzoneræ*, Lovage, *Contrayerva*; Herbs; Holy Thistle, Furnitory, *Scordium*; Harts-Horn, Unicorns-Horn, Bezoar, the Stone of an Indian Hogg, called *Pedro Porcos*, Waters, of Threacle, Alexipharmick; *Dioscordium*, Threacle, Mithridate; *Species Liberantis*, Antimony Diaphoretick; Salts; of Wormwood, Prunella, Holy-thistle, *Rob. Sambucj.*

Take *Dioscordium Fracastorij*, one dram; Alexipharmick-water, two drams; Holy Thistle-water as much as is sufficient; Syrrup of Lemmons, half an ounce: Make a Potion.

*Cordials.*

Waters of Roses, Borage, Bugloss; Conserves, of Rosemary-flowers, of Roses, Violets, & Borrage; Bezor, Harts-horn, Unicorns-horn; Confections of Alkermes, Hiacinthus; Rob of red Currants,

of Barberies; of *Scorzonera* Roots Candied, Citron, and Orange-peels Candied, *Sacharum Perlatum*, Salt of Coral.

Take Water of Borrage, Bugloss, of each two ounces and an half; Alexipharmick-water, three drams; Cinamon-water, two drams, *Sacharum Perlatum*, half an ounce; Confection of Hiacinth, half a dram; prepared Crabbs-eyes, two scruples; Spirit of Salt, four drops: Mix them.

Let the Patient now and then take one or two spoonfuls.

Externally, *Cuppinglasses*, and *Leeches*, but chiefly *Scarification* must be used; although there are some of our Chirurgions, which altogether reject Scarification; nevertheless happily curing their Patients, by the following Medicines, which resist putrifaction.

*External Medicaments against a Gangrene.*

Roots, of Angellica, round Birthwort: Herbs, of Wormwood, Holly-thistle, Tobacco, Rue, Colewort, Germander: Flowers, of Elder, St. *Johns-wort*, Mellilot, Camomil; Lye; Brine: Ink; Urine: Spirit of Wine; Threacle, *Ung. Ægyptiacum*, *Fusum* of *Felix Wurtz*: Horse-dung.

Some mix Hemlock in Plaisters or Poultices, and use it with success.

Or,

Take the tops of Wormwood, Camomil, and Elder-flowers, of each half a handful; Leaves of Germander, a handful and half; Rue, half a handful; Crums of Brown-Bread, seven ounces; Horse-dung, three ounces: Boil them in Brine, in the end adding to them, Ink, two ounces; Spirit of Wine, three ounces: Make it into a Cataplasm.

The sound Part ought also to be preserved;

K

part



partly by keeping the Humors from flowing, and partly by keeping the Gangrene from spreading: for this purpose, the Red defensive Plaster, or the *Cerot of Vigo*, is good; as also this following Cataplasim.

Take Bolearmenick, half an ounce; Powder of Galls, Cypress-nuts, Pomegranate-rinds, of each three drams; Barley-meal, six ounces; *Oxymel simplex*; as much as is sufficient to make it into a Cataplasim.

Or,

Take Seal'd Earth, Bolearmenick, of each half an ounce; Prepared Harts-horn, a dram; Camphire, a scruple; Rose-vinegar, an ounce; Oyl of Mintles, three ounces; White of an Egg: Make it into a Linament.

*Cure of a Gangrene caused from Cold.*

The part gangren'd, if not grown black, but as yet appears very red with pain; the Patient is to be placed at the fire, but not too near, but at a distance; that the heat by degrees may be again restored to the Part; and to that purpose, strongly rubbing it with Snow, or cold water; giving also to the Patient, *Threacle*, or *Mithridate*, in warm Wine. If the pain and cold remit, let the Part be embrocated very warm, with Oyl of Dill, Camomil, bitter Almonds, or Earth-worms, &c. a Decoction of congeal'd Turneps is good to foment withal; then are required both stronger and hotter Medicines, viz. Oyl of Earth, of Tiles, Turpentine, Castor, Threacle-water, Mithridate: or use the following Fomentation.

Take Herbs of *Scordium*, a handful and half; Swallow-wort, a handful; Rue, half a handful; Seeds of Roman Nettle, Cresses, of each three drams;

drams: boyl them in White-wine, let them be strained, and to a pint of the Liquor, add Spirit of Wine, two ounces: mingle it.

When the Part hath begun to Mortifie, Scarifie, continue the use of the above prescribed Medicines.

*Cure of a Gangrene from External heat, or hindered Perspiration.*

Let the Cause of the Disease be removed if possible, which if it happens from *External Ligature, Hot, or too Astringent Medicines*; let them be forthwith removed from the Part affected; and let it be washed, being first Scarified, with the following Decoction.

Take the Water of Endive, Night-shade, of each six ounces; of Sorrel-water, eight ounces; Vinegar, half a pint; Salt, an ounce and half; *Scordium*, a handful; Lupines, half an ounce: Mix them, and boyl them to the consumption of the third part.

Then let the Chirurgion use *Ung. Aegyptiacum*, or any other of the above prescribed Medicines.

*Cure of a Gangrene from the defect of Nutriment.*

Let the Patient use nourishing Aliments, all strong External, or Internal dryers, hurts, Friction of the Part with moderate hot means, as, with Oyl of Sweet Almonds, Olives; Earthworms, Scorpions, Vipers, Mans-fat, Bears, or Hens; is good. Scarifie if necessity require. Discussives here are very injurious.

*Cure of a Gangrene from a venomous Humor.*

If the Malignant Humor be in the Body itself, *Sudorifick, Cooling, and Cordial Medicines* are best; for Purging and Bleeding, I have seen them oftner to do hurt, than good.

Outwardly, Defensives are useless, but Cupping-glasses, Leeches, and Attractive Medicines are necessary.

But if *the malignant Humor come from an external cause*, the surest Remedy is an *actual Caustery*, lest the Malignity spread itself, which is to be used the very first time, and also to put a further stop, apply a defensive to the sound Part, two Fingers breadth distance from the wounded Part; so also it will put a stop to the Flux of Humors; or else all the hope consists in *Leeches, Cuppinglasses, Attractive Medicines*, and others set down above.

*Cure of a Gangrene sprung from the Scurvy.*

*Internal Remedies* we commit to the Physician; *Externally*, these are commended.

Take Seeds of Broom, Roman Nettle, Rue, of each a dram; Tops of Wormwood, two drams; Gum, *Galbanum Amoniacum*, dissolved in Vinegar, of each six drams; Oyl of Juniper, three drams; Wax, as much as is sufficient to make it into a Plaister.

Or,

Take Oyl of Earthworms, Bayes, Rue, of each two drams; Castor, a Dram; Spirit of Wine, three drams: Make it into a Linament.

Or,

Take the Rasplings of *Guajacum*, Sassafras, of each an ounce; Root of Angelica, Celandines the greater, Tamarisk-bark, of each six drams; Leaves of Scurvigrafs, water-Cresses, of each a handful; Fennel-seeds, an ounce; Spirit of Wine, a pint and half: Infuse them a night, then distill them in *Balne Maria*.

Foment the Part affected with this; and scarifie, if there be occasion: and let the Chirurgion proceed according to Art.

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Where a Gangrene hath degenereted into a *Spacelus*, especially in the Joynts; let the Part be amputated, concerning which, look in the first Part.

## C H A P. XV.

*Of Paronychia.*

**P**ANARITIUM, or Paronychia, is a Tumor very painful, in the end of the Finger, from a sharp Malignant Humor, corroding the Tendons, Nerves, Periosium, and Bone it self.

*Cause* is a sharp humor, proceeding from Choler, or Serum.

*Signs* are, an intollerable pain about the Nail, tormenting the Patient day and night; an Inflammation, oftentimes extending over the whole Arm: A Feaver for the most part, and sometimes Delirium.

*Prognostick.* ] By how much the Humor is the more Malignant, the greater Symptoms it raiseth, corrupting sometimes the Bone, the Finger, the whole Hand, and sometimes from extream pain; it occasions the death of the Patient.

*Cure.* ] Foment the Finger a while in this Decoction.

Take Flowers of Camomil, Mellilote, Elder, of each half a handful; Linseed, and Fenugrek, each two drams: boil them in Milk.

*Or, let this Cataplasme be applied.*

Take Flowers of Dill, Elder, Leaves of Henbane, of each a handful; Poppy-seeds, and Linseed, of each three drams; Marshmallow-Powder, an ounce and half.

K 3

Boil

Boil them in Milk, to the consistence of a Cataplasim.

Then make *Incision* upon the Part affected, according to the length of the Finger: and for the most part there appears one or more red Spots, containing a sharp Matter, but little in quantity, which is the Cause of the Disease.

After the Apertion of the Tumor, at the first dressing, apply to the Finger Threacle, dissolved in Spirit of Wine, and a defensive to the whole Hand; so in a day or two, the Cure will be perfected.

But if this part should be Gangren'd or Sphacelated, either by the neglect of Patient or Chirurgeon, let it be taken off: Except you will commit the business to Nature, which oftentimes separates, and throws out this Bone. A great Inflammation sometimes here produceth a *Fleshy Excrecency*, occult and senseless: This is removed by Knife, or exuding Medicines: Then Cure according to Art.

But if being too late call'd, you find a great collection of *Humors*, let Discussives, or Suppuratives be applyed: then the Tumor being either broke, or opened, take great care, lest the Tendons (which do very easily) putrifie, or incline to putrification: Separation is here necessary, whether it be by Medicines, or a Cutting Instrument: Repellents greatly hurtful.



## CHAP. XVI.

*Of an Aneurisme.*

**A**neurisma, is a Tumor besides Nature, from a Rupture of an Artery, continually beating, easily yielding to the Fingers, and as suddenly returning.

*Cause.* All Arteries, except those that are dispersed through the Brain, and upper parts, consist of a double Tunicle; the inmost of which being either Corroded, or broke; the External may be extended so much (without a Rupture of it, whatsoever others say) as to cause an *Aneurism*: Nevertheless, where the Tumor is of the bigness of ones Fist, it cannot be but that the External also must be either corroded, or broke. Anatomy doth confirm this Opinion, which the Studious in the Art of Chirurgery may inquire into.

This Tumor also may be caused, where an Artery be divided, so that the External Tunicle united to the Muscles; the Internal, by reason of the continual Pulsation, remains open.

*Signs:* A swelling increasing by degrees, of the same colour as the skin; a continual Pulsation: If the Tumor be little, it easily yields to the Fingers, so that it altogether disappears, but suddenly returns again: but if great, not so easily yielding to the touch, not so strong a Pulsation: but there is a noise observed, as of boiling Water; yet in the Head and Jaw, I have found after death an *Aneurism*, which while the Man was alive,

there could be no Pulse perceived : In the hard parts is greater circumpection to be used, then in the soft and fleshy.

*Prognosticks.* ] It is difficultly Cured ; if great, not at all, except with the taking off the part ; for the most part a long continuing Disease, although I have seen it kill, without any other accidental Cause, within two years : If Incision be made, Death suddenly follows.

*Cure.* ] In the beginning there may be some hopes. *Astringents* and *Repellents* and convenient *Ligatures*, by which we do not seldom administer something of Remedy to the Patient ; as also the applying of a *piece of Lead* straightly bound on, have sometimes Cured little *Aneurisms*.

But where the Tumor is increased, there are some would have the skin divided, and the Artery tyed both above, and below, and cut out the middle with the Tumor, and loosen not the Ligatures till the Wound is perfectly cured, and there is no fear of an Hemorrhage : but this Operation is dangerous, painful, and troublesome, and oft-times of little benefit : But to preserve life, I would take off the Member.

## CHAP. XVII.

### Of Ophthalmia.

**O**phthalmia, is an Inflammation of the Membranes of the Eye from Blood, with redness, pain, and shedding of tears.

Difference :

**Difference.** ¶ A light Inflammation, and which depends from External Causes, is call'd, a Bastard Ophthalmia, *Taraxis*, or *Epiphora*: But a great Inflammation accompanied with pain, and tears, a true Ophthalmia. And if it be so great, that the Eye-lids are also inflamed, and as it were, turned inward, 'tis call'd *Cheemosis*.

**Causes** are two: 1. Internal, as Blood, oft-times mixt with *Serum*, or Choler; seldom with Phlegm, or Melancholy. 2. External, as Smoak, Dust, &c.

**Signs** vary according to the variety of Causes: If it proceed from too great a quantity of *Blood*, the Face looks red, and the Vessels of the Eyes are extended: If either from more of *Serum*, or Choler, the redness of the Face is less, but the Tears are more sharp, and the pain greater; if from more of *Phlegm*, the reddish pain, heat and Acrimony of Tears are more remiss; and the Eye-lids at night are as it were glewed together: If from any thing of *Melancholy*, there are but few Tears, and the Eye-lids are not closed together, the Inflammation is not real, but stubborn.

**Prognostick.** ¶ An Ophthalmia is slower cured in Children, then in Old people: Continual pain, menaceth Blindness; by how much greater the Inflammation is, so much the more dangerous is it.

**Cure.** ¶ The Diet must be the same as in a Phlegmon; all sharp things are carefully to be avoided, as Garlick, Reddishes, Mustard, &c. Little or no Suppers profit: *Purging*, the use of Glisters, Bleeding ought to be oft-times reiterated, as also *Cupping-Glasses*, *Leeches*, *Blisters*: Sometimes also *Seatons*, *Issues*, and *Arterectomy* it self, which is not to be done by none but an Expert Chirurgion;

*Snee-*

*Sneezing* is hurtful ; *Provoking of Sweat* is sometimes necessary, sometimes not, which the Physician must distinguish : *Diureticks* are of great use, provided they are not too hot. *External Remedies* vary according to the variety of Causes : If from *Smoke* or *Fire*, let them be Extinguished.

If from *Dust*, or any thing got into the Eyes, 'tis to be taken forth, which is often performed, by blowing, or by the spurting in of Rose-Water.

If from the *inversion* of the *Eye-lids* : The hairs are to be cut off, or wholly to be pull'd out.

If the *Eye-lids* are *glued together*, they are to be separated, with Butter, Beer, or Cream; the Rheume is gently to be wiped; and let the Patient have a care, lest by the rubbing of his Eyes, he increaseth his Disease.

Fat things are here hurtful: *Repellent Medicines*, except in the very beginning, are not to be used, or in a very slight *Opthalmia*.

*Medicines good for the Eyes.*

Roots of Valerion, *Salomons-seal*, Orisè, Vervain. Herbs, Betony, Celandine the Great, Eyebright, Fennel, Fumitory, Plantaine : Flowers, of Roses, Violets; Aniseeds, Quince-seeds, Lin-seeds : Pippins, boyl'd or rotten; Camphire; Mustilage, of Linseeds, *Tragacanth* : Fresh Veal, White of Eggs; all sorts of Milk, especially Womans : Tutty; white and green Vitriol, *Saccharum Saturni*; Glass of Antimony; White Troches of *Rhasis*; fresh Cheese not salted; *Ung. Saturni*.

*A Water for the Eyes.*

Take Waters of Eyebright, and Celandine the greater, of each an ounce and half; White-wine, six drams; Glass of Antimony, eight grains; prepared

pared Tutty, fifteen grains; White Vitriol, two grains; Sugar-Candy, two drams; Camphire, four grains: Make it into a *Collirium*.

*Another Excellent one.*

Take Wheat, three handfulls; Bruised Ginger, three drams; Common Salt, a handfull and half; White-wine, Water of Roses, of Fennel, Plantain, of each ten ounces: Infuse them in a Copper Vessel the space of forty days, strain them, and reserve the Liquor for your use.

*Another very much esteemed.*

Take a whole Egg, boyl it hard, then the shell and yolk being taken away, put into the Cavity, Sugar of Saturn, six grains; Camphire, two grains; White Vitriol, three grains; Honey of Roses, half an ounce: then press it very hard, and let the pressed out Liquor be dropt into the Eyes twice or thrice a day.

*Another, second to none.*

Take waters of Fennel, and Eyebright, of each a pint; Common Salt, six drams; Prepared Tutty, white Vitriol, of each half an ounce: Let them boil a little, and reserve for use.

This is not to be ill thought of, for the great quantity of Vitriol, which causeth only a slight pain which suddenly vanisheth: But 'tis of so great vertue, that it cannot sufficiently be extoll'd; its use will prove it true.

*A Powder for the Eyes.*

Take Dulcified Vitriol, half a dram; prepared Tutty, fifteen grains; Sugar-candy a scruple: Make it into a fine Powder.

Unctious Medicines seldom are applied to the Eyes, or else this Oyntment is much commended.

Take



Take Verdigreece, twelve grains; *Camphire*, *Lapis Calaminaris*, of each half an ounce; prepared Tutty, half a dram; fresh Butter washed in Rose-water, two ounces: Make it into an Oynment.

*An Anodine Cataplasme.*

Take Camomile, and Mellilot Flowers, of each a pugil, rotten Apples, two ounces; Fenugreek-seed, an ounce; Crums of Brown-Bread, three ounces; two yolks of Eggs, Saffron, half a dram. Boil them in Cows-Milk, to the consistence of a Poulitice.

*An Anodine Collyrium.*

Take the Juice of Housleek, two drams; whites of Eggs, half an ounce; Womans Milk, two ounces; Rose-water, an ounce; white Troches of *Rbasia*, one scruple; *Opium*, three grains: Mix them.

*Another, which I have often found Excellent in the greatest pain.*

Take Gum Tragacanth, two drams; Muffle of the Seeds of Fleawort, three drams, Rose-water, and Plantain-water, of each as much as sufficeth: Make it into a *Collyrium* of an indifferent Consistence, and let it be instill'd by drops into the Eyes, and Linnen Cloaths wet in it outwardly applied.

## CHAP. XVIII.

*Of a Quinsey.*

A Quinsey is a Tumor of the Jaws, from Blood, o  
hindring Deglutition, and Respiration.

*Difference.* ] 'Tis divided into three species; the first is call'd *Cynanthe*, when the Muscles of the Larinx are inflamed: the Symptoms here are very dangerous, although neither Internally, nor Externally appear any Tumor; the Patient puts forth his Tongue, like a tired Dogg to fetch his breath. Secoud is *Synanche*, when the Tumor shews it self within the Jaws; the Symtoms are likewise here great, but much less than in *Cynanthe*. Third is, *Parasynanche*, when the Tumor appears more External-then Internally; and in this the Symtomes are least of all.

*Cause* is Blood, for the most part mixt with Serum, or Choler; seldom with Phlegm, or Melancholy.

*Signs* of an approaching *Quinsey* are, a stiffness of the Neck; swallowing and breathing somewhat hindred; an unusual heat, and pain in the Jaws' especially when Quinsies are Epidemick.

*Signs of present*, are; a Suffocating Asthima; swallowing hindred, which often increaseth to so great a heighth, that Drink taken in at the Mouth, comes forth again through the Nostrils; Pain, Redness, Tumour for the most part, also a continual Fever; the Tongue likewise swel'd, and the Voice altered.

*Prog-*

*Prognostick.* ] A perfect Quinsey never wants danger, but sometimes suffocates the Patient the first day, generally before the fourth : If the Matter be not suddenly concocted, and thrown forth, it is desperate : if the Vertebrae be laxated, Death is near at hand : foaming at mouth is a sign of present Death : If the Patient be taken with a pain of the Head, a *Delirium*, raving, and Death it self suddenly follows.

*Cure.* ] *Bleeding* in this case effects much, both by taking away of the Inflammation, and by hindering its encrease, which is to be performed at first sight, therefore let the Median, or Cephalick Vein of the side most affected, be opened, though in Women with child; then the Vein under the Tongue : *Cupping-glasses* with *Scarification* may also be applyed to the Neck about the second Vertebra, Shoulders and Breast : *Leeches*, *Canteryes*, and *Blisters* do much good, especially in them that are subject to Quinsey : In the mean time, if the Patient can swallow, let some purging Medicines be given him, if not, let a Glister be call in, with *Bleeding*, which must be as often reiterated, as occasion requires.

*Gargarisms* then and other External Medicines are to be used; which in the beginning are to be more Repelling, afterwards more Discussing; for Experience, and best Authors have taught.  
1. Repellents never are to be used alone, except in the beginning, and in a light Quinsey. 2. That Repellents ought alwayes to be mixt with Resolvents : For Repellents destroy the heat of the part; Resolvents cause Fluction.

*Medicines*

*Medicines in a Quinsy.*

Roots of Marsh-mallows, Liquorish :  
 Herbs, Comfrey, Mertle, Prunella, Dandelion,  
*Scabious*, Plantain, Housleek the greater, Sage,  
 Alehooff, Violets, Flowers of *Balaustians*, Red  
 Roses, Saffron; the four cold Seeds, Poppy, the  
 Rinds and Juycce of Pomgranates; Figgs, *Album*  
*Gracum*, Burnt Swallows; burnt Allom; Swal-  
 lows nests; Syrups of Maidenhair, Violets, Purilane,  
 Jajubes, *Scabious*, Lungwort, Honey of Roses.  
*Rob Diamori*.

*A Repellent Gargarism.*

Take Flowers of red Roses, *Balaustians*, of each  
 two Pugils; Pomgranate-rinds, half an ounce;  
 Oak-leaves a handful; Burnt-Allom, half a dram:  
 boyl them in Smiths Water, and add to a pint  
 of the Liquor, two ounces of *Rob Diamori*: Mix  
 them.

*Another very convenient in the beginning  
of the Disease.*

Take leaves of Dandelion, two handfuls; Ale-  
 hooff, Violets, of each half an handful: boyl  
 them in Barley-water, and to a pint of the strain-  
 ed Liquor; add of Common-Honey of Roses, and  
 strained, of each an ounce and half; Spirit of Vi-  
 triol, 15 drops: Mix them.

*A Repellent, and somewhat discussive Gargarism:*

Take Liquorish, Pomgranate-rinds, of each  
 two

two drams; Balauftia Flowers, a pugil; *Jubens*, No. xi. Figs, No. iij. Raisons, six drams: boyl them in Barley-water. To a pint of the Decoction, add of common and strained Honey of Roses, Syrup of Maidenhair, of each an ounce: Mix them.

*A Gargarism greatly Repelling, but strongly  
Discussing.*

Take the Roots of Dwarf Elder, Orrise, of each two drams; Flowers of Camomile, a pugil; Red Roses, Hyfop, of each two pugils; Dates, No. iij. Figs, No. vj. Fenugreek-seeds, two drams; *Album Græcum*, one dram: boyl them in Turnep Broth. Add to it Syrup of Maidenhair, and *Jubies*, of each an ounce: Mix them.

If the pain be very great, boyl them in new Milk; chiefly in Goats.

*External Medicines for a Quinsy.*

Oyl of Nuts, White Lillies, Almonds, Camomile, Dill, Capons-grease, Hoggs-grease, Oynment of Marshmallows, Plaister of *Mucilages*, Doggs and Pigeons-dung, Swallows Nests:

Taks Roots of Marshmallows, White Lillies, of each an ounce; one Swallows Nest, Figs, Dates, of each No. iij. *Album Græcum*, half an ounce; Boild Onions, half an ounce: boyl them in Barley-water, and to a pint of the strained Liquor, add of Wheat-Meal, and the Powder of Linseed, of each an ounce; Fenugreek, and Marshmallows powdred, of each two ounces and a half; Yolks of two Eggs, Eastern Saffran, two drams; Oyl of Camo-



Camomile, two ounces and a half : Make it into a Cataplasim.

Take Juice of Onions, two ounces ; Oyl of White Lillies, Orrise, of each an ounce and half ; boyl them a little, adding to them of Swallows-Nest, a dram ; Pitch , and Wax, as much as sufficeth to make it into a Plaister.

But if the Tumor tends to Suppuration, 'tis to be forwarded, and then to be opened either by Medicines, or Lancet.

*A Suppurating Cataplasim.*

Take Roots of Bryony , White Lillies, Orrise, of each three drams ; Leaves of Pellitory of the Wall, a handful ; Camomile-flowers, half a handful ; Onions, an ounce ; Figgs, No. xij. boyl them, and bruise them, adding of the Powder of Fenugreek-seed, and Linseed, of each two ounces ; Hens-grease, an ounce ; Oyl of Camomile, two ounces : Mix them.

*A Suppurating Gargarisme.*

Take Roots of White Lillies, and Liquorish , of each three drams ; Onions, half an ounce ; Raisons ston'd, an ounce ; Figgs, No. vj. Linseed, and Fenugreek , of each two drams ; Leaves of Mallows, and Colworts , of each half a handful : boyl them in Barley-water, and to a pint of the strained Liquor , add of Syrup of Maidenhair, two ounces : Mix them.

And to make the Abscess break, add to this Gargarism.

Take Mustardseed , two Drams ; Roots of Pellitory of Spain , powdered, one dram ; Saffron,

fron, a scruple; Oximel simple, an ounce: Mix them.

But if it doth not forthwith break by these Medicines, 'tis to be opened by a Lancet, or some other Instrument; afterwards using Emollient Gargarisms, and somewhat absterfive.

*The end of the first Book of the second Part.*

The

# Verbetty's Chirurgery.

The second Book of the second Part  
of Chirurgery:

*Of Wounds.*

## C H A P. I.

*Of the Nature, Differences, Causes, and  
Signs of Wounds.*



*Wound is a solution of continuity in the soft parts of the Body, from a hard Instrument, causing an abolition, or diminution of action.*

Differences are taken, 1. From the Form, by which reason, according to the Figure, some are long, others oblique; according to the magnitude; some are little, others great; some are deep, others superficial. 2. From the wounded Part, as the Head, Lungs, Heart, Stomach, Liver, Spleen, Guts, Nerve, Tendon, Vein, or Muscle; sometimes the skin is only petretrated, then 'tis a

L 2

simple

simple Wound; sometimes a part of the flesh is taken away, and then 'tis call'd a compound, or hollow Wound. 3. From the Causes, which shall presently be set down; sometimes a Wound happens to be poisoned, and to have many Symptoms joyned with it.

*Causes* are five-fold; viz. 1. All things that cut, as a Knife, Sword, Glas: 2. All things that prick, as Needles, Arrows, Teeth: 3. Which perforate, as hot Iron, Bullets: 4. Which break, as a Fall, Stroke, or the Carrying or Lifting of any great Burthens: 5. All things which constrict, as a Stone, Stick, &c.

*Signs.* ] External Wounds are of themselves manifest enough; but those of the Internal parts, are not always so easily judged of: which to do, is to be known by Anatomy. 1. What is the situation of each part. 2. The use: 3. The Symptoms are to be considered: 4. The quality of those things are to be noted, that Nature ejects through the Wound: The other Signs you shall have in their proper places.

*Prognosticks.* ] To know the events of Wounds, especially to predict which are Mortal, which not, is a thing absolutely necessary for a Surgeon: For from this judgment oft-times depends the Life of unfortunate Man.

*A mortal Wound is that, which in the space of few hours, or dayes, of necessity causes Death, and cannot by any Art be Cured.*

For those that in themselves are Curable, yet by reason of ill Symptoms, or through the neglect either of the Patient, or Chirurgion, do occasion Death, ought not to be accounted mortal Wounds: Incurable Wounds themselves are not to be call'd mortal,

mortal if they are not the cause of Death, suddenly to the Patient; but that he not only lives many weeks, but oftentimes many years after.

1. Among the Wounds that are mortal, are to be accounted the Wounds of the Brain, but not all of them; for experience hath taught us, that part of the Brain hath been taken forth, and the Life preserved, though the Understanding lost.

Therefore those Wounds of the Brain that be absolutely mortal, are, 1. *When a Nerve is also hurt*: 2. *When Blood, or some other Humor obstructs the beginning of the Nerves*: 3. *When after a few dayes, the Concrete, and putrified Blood produceth a Fever, Delirium, and Death it self.*

Blood here concreted, I speak not of in this place. That which lies between the *Dura Mater*, and the Skul, is to be taken forth by the Trepan, and the Patient may be preserved, but not that which is included between the *Dura*, and *Pia Mater*, or between the *Pia*, and the Brain: Although sometimes, that which is detained between both Membranes, by the dividing of the *Dura* may be taken forth, and so the Patient preserved.

2. The Wounds of the Spinal Marrow are also mortal, which happens in the Neck, or nearer to the Head; but these which happen lower, as about the *Os Sacrum*, are of lesser danger.

3. The Wounds of the Lungs are mortal, if great and deep, where the great Vessels, or the Branches of the *Aspera Arteria* are hurt: Where the Vessels are divided, there follows a great effusion of Blood, where the Branches of the *Aspera Arteria*, the Breath comes forth more through the Wound, than the Mouth.

4. Wounds of the Heart are alwayes mortal;



for though one, or two Wounded in the heart, have lived, two, three, or four dayes; it was never found yet, that ever any escaped.

5. The wound of the Wind-pipe may be cured, amongst which, those inflicted on the hinder part of the Body, the Membranes at least to which the Cartilaginous Rings are joyned, must be hurt; if the Rings themselves are wounded, there's no Cure to be expected; yet sometimes those wounds bring a lingering death; so that I have seen one so wounded, live eighteen weeks before he dyed.

6. Wounds of the *Diaphragma*, those that are inflicted in the fleshy part of it, are curable; but those that are in the Nervous part, though indeed that always occasions not sudden death, yet 'tis + impossible ever to cure them.

7. Wounds of the *Stomach* are not seldom cured; those chiefly being mortal that happen in the upper Orifice, or in Nerves that are distributed over the Stomach.

8. The wounds of the *small Guts* are seldom cured, but the wounds of the *great Guts* much oftner; especially if they are not great.

9. Wounds of the *Liver* and *Spleen* are mortal, where the Vessels themselves are wounded; where + not, they may be Cured.

10. Wounds of the *Kidneys* are not mortal; if the wound penetrate into the Cavity it self, for the most part an Ulcer follows, which consumes the whole Kidney, yet the Patient may continue many years: If the *Paranebyma* only be wounded, sometimes, though difficultly, it may be cured.

11. Wounds of the *Bladder* are seldom perfectly

ly cured; but for the most there remains a Fistula; but those that are made at the neck of the Bladder, are daily cured.

12. Wounds of the great *Veins* and *Arteries* are often mortal.

13. Wounds of the great *Nerves* are for the most part incurable, and sometimes mortal.

14. Wounds from *poisoned Instruments*, or *Creeper*, generally are mortal.

Wounds of *Nerves*, *Veins*, *Tendons*, and *Membranes*, are more difficultly, and longer of Cure, than those of the fleshy parts.

A wound from a pricking Instrument is of less danger, than from a bruising.

A Nerve, Vein, or Artery, if wholly divided, their wounds are more dangerous, than if they were but in part.

A great Inflammation coming upon a great Wound, is of no great danger, except it continue too long; but a great Inflammation falling upon a little Wound, is an ill sign.

By the fifth day, for the most part the Inflammation decreaseth; therefore if the Wound appear white, livid, or black, 'tis not void of danger.

A Fever, Vomiting, and Convulsion, are dangerous; but a Fever, and Vomiting of less danger than a Convulsion.

## CHAP. II.

*Of the Cure of Wounds in General.*

**H**ERE are required four Intentions: 1. To preserve the temper and strength of the wounded Part. 2. To remove the Symptoms. 3. To endeavour that nothing remains, or be left behind in the Wound. 4. That the gaping lips of the Wound be joyned together, and being so joyned, be kept.

## CHAP. III.

*Of the preservation of the Strength, and Native heat in the wounded Part.*

**A**RT removes the impediments of Cure, but Nature her self cures the Disease, which it will scarce effect, where the Native heat is weak, or the Blood vitiated, or where it flows in too great, or too little quantity to the Wound: in flowing in too great quantity, it produceth an Inflammation, Pain, Putrifaction, and many other Symptoms; where, in too little, the wound is robbed of its Natural Balsom, necessary to consolidate it.

*The natural strength, and native heat is preserved by a convenient Diet, fitted to the temperament of mans Body in general, and in particular to the*

the Part affected. Of the Diet of the Sanguine, Cholerick, Phlegmatick, and Melancholick, we have treated of before, when we spoke concerning a *Pblegmon*, *Erisipelas*, *Oedema*, *Scirrhus*.

Then care is to be had of the blood, seeing it affords assistance to the matter; and serves to unite the wound. Where it is vitiated, it requires Purging; But if it flow in too great quantity, Intercipients, Repellents, Revellents, and Divivation must be used.

If it flow in too small quantity, Aliments that nourish are convenient, as also Medicines that strengthen and move Sweat: Outwardly, gentle Frictions, and Embrocations moderately hot.

Then the Cure is to be perfected by External Medicines; which shall be declared in the following, when we speak of the removal of the Symptoms, and the Cure of Wounds themselves.

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## CHAP. IV.

### *Of the Symptoms of Wounds.*

THE chief Symptoms of Wounds are, 1. A Fever, whole Cure we commend to the Physician. 2. A *Pblegmon*, or Inflammation. 3. An *Erisipelas*. Of the Cure of both which, look in the second and third Chapter of the first Book. 4. Hemorrhage, which not only impedes the Cure, but also deprives of strength, and life it self; therefore great care is to be taken that it be stopped as soon as possible, which in the greater Vessels, especially the Arteries, is very hard to do: for Medicines that stop Blood are too weak, and hard

Liga-

Ligatures occasion a *Gangrene*; the surest way therefore in my opinion is an actual Caution: the lesser Vessels may, and will close: Some close the Wound of the Vessels with their Fingers, and so hold them there while the Blood is coagulated, and the Flux stopt; but this operation seldom succeeds: besides the long holding of the Finger in the Wound is hurtful.

Therefore let the Wound together with the Vessels be forthwith closed by the Fingers, but if you cannot come to do this, outwardly make a compresse upon the Vessel, which done, wipe away the Blood with a Sponge, then sprinkle some Restricting Powder, but not over the whole Wound (which is used to be done by the ignorant) but only upon the Vessels; then bind up the Wound, continuing the use of the Medicines stopping Bleeding, while there appears no longer any Blood; in the mean time, not neglecting generalls, viz Scarification, and Bleeding, &c.

*Medicines that stop a Flux of Blood.*

Roots of Bistort, Cinquefoile Tormentil, Comfrey the greater, Red Saunders, *Lignum Lentisci*, Pomegranate-rinds, Mastick, Talk, *Acacia*, Dragons blood, Amber, Sarcocolls, Frankinsence; the hairs of a Hare, *Os sepia*, Burnt Crabs, Whites of Eggs, Mummy, Cobwebs, red Corral, Chalk, Bloodstone, Bolearmerrick, Aloes succotrine, Frogs dried and powdered, Crude Vitriol, burnt  
+ Vitriol.

Take fine Meal, three ounces; Dragons-blood, Frankinsence, of each an ounce and an half; Bole, Sealed Earth, of each two drams; Talk, six drams



rams; Dried Froggs, an ounce; Hares hair  
 very small, a dram and an half; Whites of  
 Eggs dried in the Sun, and powdered, half an  
 ounce; New Sponges torried, an ounce; white  
 Vitriol, a dram: Mix them, and make them into  
 a fine Powder.

5. Pain; which must of necessity be eased, be-  
 cause it creates watchings, and dejects the Spi-  
 rits, and is cause of the Flux of Humours to the  
 Part affected, and of Inflammation, Feaver, and  
 Gangrene; but the Causes are diligently to be  
 considered: For if either *Medicines that are sharp,*  
*or too hot,* occasion it, they are presently to be al-  
 tered: 'Tis better to confess an Error, than per-  
 tinaciously to persevere in it.

If any forrein body remains in the Wound, it  
 must be drawn forth.

If pain comes from the choaking in of the Matter,  
 you must allow it a free passage.

If an Inflammation be the cause of it; its Reme-  
 dies are set down in the second Chapter of the first  
 Book: You must apply to the Wound those  
 things which ease pain, and are Anodine, as Oyl  
 of Roses, Linseed, Camomile, Worms, sweet Al-  
 monds, Poppies, &c.

Take Oyl of Roses, of Poppy-seeds, of Camo-  
 mile, of each an ounce; the white of an Egg  
 Saffron, a scruple. Mix them.

But if the pain cease not with these or the like  
 Medicines, it's a sign that some Nerve is wound-  
 ed, or affected by consent: The Cure shall be set  
 down in the following.

6. *Convulsion, or Spasm*; this shews the Ma-  
 lignity of the Humor, or the ill constitution of  
 the Nerves, neither of them promising any good:

Here

Here must be used both Internal and External Medicines appropriated to the Disease, which we commend to the Physician, by reason of the diversity of Causes.

*External Medicines for a Convulsion.*

Balsom of Peru, the fat of Geese, Castor, Foxes Rams, Mans, Horse-dung, Oyls of Juniper, Lavender, *Ol. Philosophorum*, Amber, Turpentine, Rue, Marjaron, Worms, Castor, Orrise, Bayes, *Petroleum*: Oyntments, of *Agrippa*, *Martianum*, *Ung. Nervorum*, Spirit of Wine,

Take Oyl of Snails, Worms, Sefamin. of each an ounce; of the grease of Rams, and Foxes, of each half an ounce; fresh Butter, six drams; Spirit of Wine, three ounces: Let them boyl till the Spirit be consumed; then add Oyl of Spike distilled, Rosemary, Amber, of each two drams: Mix it into an Oyntment.

Against a Convulsion, there cannot a better Remedy be invented then distilled Oyl of Lavender, some few drops being given in some convenient Liquor; and anointing well the Convulsed part.

7. *Hypersarcosis*, or too great increase of flesh; which if it happens from *abundance of Blood*, the flesh is solid, and otherwise well conditioned; but if from the too weak quality of drying Medicines, it is spongy; of the same nature, as when the Bone underneath is rotten. In the *former Case*, Bleeding is convenient, and sometimes fasting, and the use of strong drying Medicines: In the *latter*, the Medicines must be very strongly drying that are applyed: Deterfive and Corroding Remedies are here good.

*Medicines*

*Medecines against too great increase of Flesh.*

Burnt Sponges, burnt Alom, Galls, Aloes, the  
Sark of Frankincense, Tutty, Verdigrease, burnt  
Vitriol, Precipitate, Arsnick.

*A green Corrosive Water.*

Take Crude Alom, Verdigrease, of each two  
drams; boyl them in eighteen ounces of White-  
Wine, to a waisting of the fourth part: strain them,  
and add Camphire, a dram: Mix them.

*A Powder very drying, and somewhat Corroding.*

Take Galls, Balaustians, burnt Alom, Frankin-  
cense, Myrrhe, of each a dram; Dragons blood,  
Ceruse, Verdigrease, of each half a dram: make it  
into a Powder.

8. A Gangrene, and Spachelus, concerning  
which, look into the fourteenth Chapter of the first  
Book of the second Part of Chirurgery.

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## C H A P. V.

*Of the drawing forth Extraneous Bodies  
out of the Wound.*

**N**O Wound ought to be joyned together, as  
long as any Extraneous Body remains in it,  
for otherwise, after some little time it will break  
out into an Ulcer: The Blood, by which Nature  
unites the divided parts, if it flow in great quan-  
tity

tity to the wounded part, and there coagulated 'tis to be removed by expression, sucking it out or by any other way; for so there will be less matter generated, and the Symptoms fewer; but where an Hæmorrhage is feared, all the Blood is not to be cleansed away.

Where *Hairs* are about the Wound, they are to be removed.

If *Sand*, or any such like thing remain within the Lips of the Wound, they are to be washed away with warm Wine:

*Broken Bones*, if loose, are to be taken away the first dressing, except an Hæmorrhage hinder; but if they yet stick to the other Bones, then Nature's endeavours are to be expected, and see whether they will be united again to the other Bone or separated from it.

If a piece of *Glass*, *Thorn*, *Arrow*, or *Bullet*, or any like thing remains in the Wound, 'tis forthwith to be taken forth: But before the Chirurgeon goes about to draw them forth, he must consider whether the Patient, that Extraneous Body being extracted, can live or not; least the Chirurgeon be thought to have occasioned the Patient's death.

Of the manner of Extracting Bullets, we have Treated of before; and Arrows are to be drawn forth almost after the same manner; but they are not in use at this day among Christian Souldiers; but if neither with the Hand, nor Instruments, what remains in the Wound, can be drawn forth: then you must endeavour it with Medicines indued with an extractive quality.

*Medicines*

*Medicines drawing forth Thorns, Bones,  
Bullets, &c.*

Roots of Aron, Birthwort, Bastard Dittany,  
Masterwort, Polypody, Radishes, Valerian: Herbs,  
Southernwood, Pimpernel, Anemone, Red-  
beet, Dittany: Gums, *Ammoniacum*, *Galbanum*,  
*Sagapenum*, *Succinum*, Pitch. The brains and  
grease of Hares. Crabs. A live Mouse cut in two.  
Common Flies, Earthworms, burnt Frogs, Goose-  
dung, Load-stone, Leaven. Plaister of Opo-  
eldoch.

Take Roots of round Birthwort, Dittany of  
Crete, of each a dram and an half, Rosin of the  
Pine, Colophony, of each six drams; yellow Am-  
ber, three drams; Gum *Ammoniacum*, Appopo-  
max, of each an ounce; Pigeons-dung, three  
drams; Oyl of Bayes, half an ounce; Turpen-  
tine, and Pitch; as much as to make it into a  
Plaister.

CHAP. VI.

*Of the manner of joyning the Lips of  
Wounds together.*

**T**He lips of the Wound are joyned together,  
either by Ligature, or Stitching. *Ligature* is  
convenient in wounds made according to the  
length of the Member, and not deep; let the  
Bandage be neither too hard, nor too loose, and  
of that breadth that it may take in the whole  
wound.



wound. If it be a long wound, the Rowler must be three fingers broad, and laying the mid<sup>d</sup>le of it upon the wound, rowle one part upward and the other downward; which must neither be too loose, for then it will not keep the lips of the wound together; nor too straight, lest it cause an Inflammation: In the Winter the Rowlers must be of greater length than in the Summer. In great wounds besides Rowlers, the Surgeon stands in need of Boulsters.

*Stiching* is performed either by *Needle*, or *Sticking Medicines*. It's requisite that the Chirurgion never be without a Needle; for by it he frees his Patient from pain, the Wound from inflammation, and himself from many inconveniencies: and the wound so requiring it, let him take a three pointed Needle, with a waxed Thred, which let him pass through the skin, and sometimes also through the subjacent flesh, taking care that the Tendons be not prick't; and also that the stitches be not too few, nor too many, but keeping such distance between each, that the skin may be drawn together, and the edges themselves joyned, leaving a little part for the putting in of a Tent, that may give passage to the superfluous Matter: these Tents are not necessary in little wounds: and in great, they must neither touch the Nerve or Tendon, nor reach to the bottom of the wound.

Where Ligature is not sufficient, and a stitch with a Needle not convenient, the sticking Plaster is very necessary; for so firmly doth this Plaster adhere to the wound, that neither the matter flowing out of the wound, nor the Blood, nor any other moisture loosens it: Oftentimes is

used

used the *Stiptick Plaister of Crollins*, or *Paracelsus* but this sticks more firmly.

Take *Sarcocolls*, *Bole*, *Mastick*, *Dragons-blood*, *Rosin of the Pine*, of each a dram; *Gum Tack-mahack*, a dram and an half; *Naval-pitch*, as much as sufficeth: Make it into a *Plaister*.

## C H A P. VII.

### *Of Medicines necessary for the Curing of Wounds.*

**M**edicines necessary for the Cure of Wounds, are of three sorts: 1. *Digestives*, or moving matter. 2. *Sarcoticks*, or generating flesh. 3. *Epuloticks*, or inducing a *Cicatrice*.

Experience hath taught, that a wound may be Cured oftentimes, only by a *Digestive*, or *Sarcotick* Medicines; but this is better, and more certain when they both are mixt together: In the fleshy parts, *Digestives* may alone serve; but in *Tendinous*, *Nervous*, *Membranous*, or other drier parts; *Sarcoticks* are convenient, either alone, or mixt with *Digestives*.

#### *Digestives.*

Common Oyl, Oyl of *Roses*, *Mastick*; fresh *Butter*, and *May-Butter*, *Gum Elemny*, *Turpentine*, *Frankincense*, *Mastick*; the *Flower of Wheat*, *Barley*, *Fenugreek*; *Yolks of Eggs*; *Honey*.

Take Oyl of *Olives*, two ounces; yellow Wax, half

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half an ounce, Frankincense, Mastick, of each a dram; the yolk of an Egg, fresh Butter, as much as is sufficient: Make it into an Oyntment.

*Sarcotticks.*

Roots of Birthwort, Orrise, Sanicle, Comfrey the greater: Herbs, Bettony, Centaury, Comfrey, St. *Johns*-wort, Pimpinell, Plaintain, Scabious, *Scordium*, *Vervain*; of Seeds, Beans, Fenugreek, Linseed, Barley; Frankincense, Aloes, Bole, sealed Earth, Colophony; Gums of Elemmy, Pine, *Ladanum*, Mastick, Myrrhe, Dragons-blood, Sarcocols, Turpentine, Tragacanth; Wax, Honey, Mummy, Cadmia, Ceruse, *Lapis Calaminaris*, Litharge, burnt-Lead, Phomholix, *Lapis Hematiz*, Oyls of St. *Johns*-wort, Bayes, Mastick, Myrrhe; Oyntment, *Anreum*, *Basilicum*, *Fuscum*, of *Felix Wurtz*, *Diapompholigos*: Plaisters, *Striplicum* of *Crollius*, and *Paracelsus*, *Oppodeldoch*, of *Betony*, *Diasulphuris* of *Rulandus*; *Balsoms*, of *Pern*, of *Crollius*, of *Magatus*; *Aqua vite*: the fat of Geese, Foxes, Bears, Goats, Mans.

*An Excellent Vulnery Balsom.*

Take Turpentine, half an pound; Gum *Galbanum*, Elemmy, Ivy, Frankincense, Mastick, Myrrhe, of each an ounce; Aloes, Xyloaloes, Galanga, Cloves, Cinamon, Nutmegs, Cubebs, of each half an ounce: infuse them four and twenty hours in a sufficient quantity of Spirit of Wine, distill them: and preserve the Oyl for your use.

*Another.*

Take Oyl of Violets, eight ounces; of Bayes, an ounce, Oyl of Venice-Turpentine, half an ounce;

ounce; of Spike distill'd, of Junipers, Verdigreese, of each a dram; Rosin of the Pine, Turpentine, Colophony, Mastick, of each half an ounce; white *Calcanthum*, a dram and half: Boyl them a little; then strain them for your use.

*Another.*

Take flower of Brimstone, three ounces; Mirtle three drams; Camphire, one dram; Venice Turpentine, five ounces: distill them, and preserve the Oyl for your use.

*A Vulnerary Plaister.*

Take the Roots of round Birthwort, and Comfrey the greater, of each half an ounce; *Mummy*; Colophony, Aloes, Mastick, Dragons-blood, Litharge of Gold, *Tutia*, of each two drams; Gum-Elemne, two Ounces; Turpentine, as much as sufficeth to make it into a Plaister.

*Another most Excellent ointment in old and new Wounds.*

Take Gum *Galbanum*, ten drams; *Ammoniacum*, three ounces and an half; *Oppoponax*, an ounce; *Bdellium*, three ounces; Yellow Wax, twenty ounces; *Olebanum*, three ounces; Litharge of Gold, a pound; Mirrhe, ten drams; Verdigreese, Mastick, Roots of long Birthwort, of each an ounce; Load-stone, two ounces; prepared *Tutia*, *Lapis Calaminaris*, of each two drams; old Oyl of Olive, a pint and half: dissolve the Gums in Vinegar, and let the rest be powdered; mingle them according to Art; and boyl them into the form of a Plaister.

*Epulottick, or drying Medicines.*

Roots of Comfrey, Tormentil; Herbs, *S. Folms-wort*, Plaintain, Sanicle, Fluellin, Betony; Flowers, of Balauftians, red Roses; Saunders; Aloes, Mirrhe, Mastick, Sarcocols, *Lapis Calaminaris*, red Lead, Lead, Litharge, Tutty; Oyntments of *Diapompholigos*, *Album Camphoratum*; Plaisters, *Gryseum, de plumbo*, *Opodeldoch, de miris Barbarum*.

Take Oyl of Roses, of unripe Olives, of each three ounces; of Mirtles, Oyntment of Poplars, of each an ounce and half; Leaves of Plantain, and Nightshade, of each a handful; let them steep together eight dayes: afterwards add to the strained Liquor, Wax, two ounces; mingle them over the fire, adding Litharge of Gold, three ounces; Ceruse, an ounce; Tutty a dram; burnt Lead, three drams; burnt Brass, a dram and an half; Camphire, a dram: let them be rubb'd in a Leaden Morter into the form of an Oyntment.

Take Roots of Tormentil, Bistort, round Birthwort, burnt-Eggshells, Frankincense, Dragons-blood, of each half an ounce; *Lapis Calaminaris*, a dram; Litharge, two drams: Make it into a Powder.

Take *Ung. Pompholigos*, *Diapalme grisei*, of each an ounce; Gum Elemne, two drams, *Saccharum Saturni*, half a dram; Wax, as much as sufficeth to make it into a Plaister.

I never knew any better Medicine, if applied in a fitting time, to bring to a Cicatrice, than an *Amalgama of Mercury*, of which this is the description,

Take



Take two ounces of Lead, melt it, then add to it two ounces of Quicksilver, pour it upon Paper dried, and poudred; it may be mixt with the Plaister of Lead, or *Diapomphaligos*.

To these External Remedies, we joyn also Internal Medicines, which have been observed to profit much at all times in the Cure of Wounds.

*Vulneraries.*

Wintergreen, Sanicle, Ladies Mantle, Comfrey, Mugwort, Saxifrage, Tormentil, Agrimony, Milfoile, Horse-tail, Hound-stongue, Eetony, Periwinkle; Mous-ear, Golden-rod, Bithwort, Bistort, Dictany, Centaury the less, Gentian.

*A Wound Drink.*

Take Roots of Comfrey the greater, half an ounce; of Wintergreen, two handfuls; of Sanicle, two pugils, Strawberries, Ladies Mantle, Sage, of each an handful: boyl them in red Wine, and to a pint and half of the strained Liquor, add of the whitest Sugar, as much as is sufficient. Dose, three ounces.

*Another very effectual, even when the Bone is hurt.*

Take Roots of round Birthwort, an ounce and half; Sowbread, an ounce, Self-heal, Cranebill, of each an handful; Savin, three drams; Mummy, two drams; Crabs-eyes, half an ounce; Galangal, two drams, poudred and cut: boyl them in red Wine, and to three pints of the strained Liquor, add of the Syrup of Comfrey, of *Fernelius*, four ounces; mingle them. Dose two ounces.

If any desires an Oyntment, that many boast is able to Cure the Wound, though the Patient be absent; this is its best description.

*A Sympathetick Ointment.*

Take Moss, two ounces; Mummy, half an ounce; Mans-fat, two ounces; Mans-blood, half an ounce; Oyl of Linseed, two drams; Oyl of Roses, Bole, of each an ounce: Mix it, and make an Oyntment.

Some use only Vitriol calcined in the Sun; but whosoever shall use them without superstition, shall find many things attributed to Medicines, that are due to Nature; therefore 'tis safest to proceed in the beaten way.

C H A P. VIII.

*Of Wounds of the Nerves.*

**I**N Treating of the Wounds of the Nerves, we also comprehend those of the Tendons; because there is scarce any difference in the Cure it self.

'Tis to be *distinguish'd* here, where the Nerve, or Tendon be divided, or only prick't.

This Wound is known, 1. By considering *the wounded place*, and by Anatomy, which teacheth in what Members the Nerves are inserted; but the Tendons seeing they terminate near the joynts, the Hands and Feet having many; if a wound should be inflicted in these parts, who would not fear them to be so hurt, especially if it be with a transverse wound. 2ly. From

the

the great pain, which causes Pulsation, Inflammation, Convulsion, and Delirium, &c. except the Nerves be wholly tranversly divided, and then the Symptoms are altogether not so grievous.

*Prognosticks.* ] All the wounds of the Nerves are dangerous. A puncture more dangerous than an Incision: Wounds of Tendons are less dangerous than Nerves. Convulsion is an ill sign; Nerves and Tendons wounded, do easily putrifie.

*Cure.* ] In all Wounds of Nerves or Tendons, seeing pain greatly molests, occasioning many Symptoms; care is to be taken that it be *alleviated* as soon as possible. Outward cold things doth here hugely injure, not only the Air, but Medicines themselves: For experience hath taught us, that Cold, Moist, and Astringent Medicines do nought but hurt; therefore 'tis best to use Medicines moderately hot and drying, but void of any sharpness. The Wound also is to be kept open, till the Cure be absolutely performed, that the Matter may flow freely forth, which if kept in, may increase the pain, and cause the putrifaction of the Nerve; which if it should happen, the corrupt Part is to be cut off, or removed by an actual Cautey.

Moreover it is to be observed, whether the Nerve or Tendon lies bare or not; if bare, warm Medicines are convenient; but if covered, hotter Medicines are required; in the mean time, Purging and Bleeding are not to be neglected.

*External Medicines in Wounds of the Nerves, and Tendons.*

Old Oyl of Olives, of Earth-worms, of Dill,

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Ruc,

Rue, Rosemary, Costmary, White Lillies, St. John's wort, Castore, of Turpentine, Wax, Lavender, Balsom of Peru; Gums, *Elemi*, Tacamahac, *Carrana*, *Opobalsamum*, *Copayva*, Spirit of Wine.

Take Venice Turpentine, Tears of the Fir-tree, of each an ounce, Gum, Tacamahac, half an ounce, of *Carrana*, two drams; Balsom of Peru, three drams; *Propoleas*, six drams; Oyl of St. John's wort, an ounce: Make it into an Oyntment.

Oyl of Wax, Limewater, and the brann Ointment of Felix Wuriz, are here excellent, if rightly used.

## CHAP. IX.

### Of Wounds by Gunshot.

**A**Lthough daily practice teaches us, that Bullets may be poisoned, yet they are not such of their own nature; for the pain in parts, and the other Symptoms arise from the solution of the continuity and the contusion.

Here first the Bullet, and any thing else that accompanies it, is to be drawn forth, lest pain, and inflammation coming upon it, may hinder; and care is to be had, that neither of them increase: And the contused Part, by the following Medicines be brought to suppuration.

Take Oyl of White Lillies, of Violets, of each two pints; two Puppies newly whelp't; boyl them till their bones be almost dissolved, then add Oyl of Earthworms, a pint, and boyl them again; strain them, and add of Venice Turpentine, three ounces;

ounces; Spirit of Wine, an ounce: Make it into a Liniment.

*A Wound Oyntment.*

Take Venice Turpentine, an ounce; *Galbanum*, two drams; Calfs-marow, half an ounce; Powder of Scorzonera, and *Scordium* Roots, of each two scruples; Oyl of St. *Johns*-worts, half an ounce; the Yolk of an Egg, Threacle, a dram: Make it into an Oyntment.

*Another more effectual.*

Take Roots of Birthwort poudred, a scruple and an half; Mummy, Amber, Mastick, of each a dram; Turpentine, half an ounce; *Euphorbium*, a dram; *Unguentum Aegyptiacum*, half an ounce; yolk of one Egg; Oyl of Elders, as much as is sufficient; Saffron, a scruple: Make it into an Oyntment.

*Another more Excellent than the former, and which likewise resists Putrifaction.*

Take Tar, Turpentine, *Galbanum*, of each two ounces; Mastick, Frankincense, Nitre, *Sal Armoniack*, of each an ounce; Alom, half a dram; Verdigreese, white Vitriol, Camphire, Powder of Worms, of each a dram; Oyl of Linseed, *Roses*, of each two ounces; Oyl of Worms, and Turpentine, of each a dram: Molax them with a gentle fire; and make them into an Oyntment.

If the Nerve hinder not, in a great putrifaction, there may be added some Præcipitated Mercury.



*An Anodine Plaister.*

Take Bean-meal, Crums of Brown-Bread, of each two drams ; let them be put in Milk , adding to them Oyl of Roses, Violets, of each an ounce ; Yolks of Eggs, N<sup>o</sup>. iij. Powder of Red Roses, *Scordium*, of each an ounce an half ; Wax, as much as sufficeth ; Make it into a Plaister.

*An Anodine Cataplasme.*

Take Roots of Marshmallows , Comfrey the greater, of each an ounce ; Flowers of Camomill, Melilot, St. *Johns*-wort, of each half a handful ; tops of Wormwood, two Pugils ; boil them in Milk, adding to them of the Meal of Marshmallow-roots , and Beans , of each an ounce and an half : Make it into a Pultice.

If the Wound be quite through, a Tent must be put into both Orifices , for a Flammula is inconvenient and hurtful. At first, dressing it once a day is sufficient, for in Wounds made by Gunshot, there seldom appears any Matter before the third or fourth day; after this the quantity, or acrimony of the Matter will guide you betwixt whether it is to be drest once, twice, or thrice a day.

## C H A P. X.

*Of Poysoned Wounds.*

**P**oysoned Wounds are made sometimes by *Bullets*, *Arrows*, *Swords*, and other *Instruments* ; sometimes

times by mad Beasts, as Doggs, Wolves, which hurt more by their venomous quality, than by wounding.

*Signs*, are vehement pain, Livid colour suddenly becoming black, Symptoms more grievous than for the quality of the Wound: A heat over the whole Body, trembling, *Delirium*, Fainting, &c.

*Prognosticks*. ] A little poisoned Wound may bring Death, especially if near to the heart, or any other noble Part; or the Cure of it committed later then ought to be to the Chyrurgion.

Cure consists chiefly in this, *that the venome be drawn forth* by Cupping-glasses, attractive Medicines, Scarifications, or, which is safest, by an actual Cautery; but then it must be in a Nervous Part, the Escar to be forthwith removed, and the Wound to be Cured by degrees. Inwardly *Sudorificks* and *Cordials* profit, Bleeding and Purging hurt.

*A Plaister that draws forth the poison out of the Wound, and corroborates the Part.*

Take boild Onions, three ounces; Treacle, half an ounce; Goats-dung, an ounce; Angelica-Roots in powder, a dram and half; Oyl of Scorpions, an ounce and half; Honey and Wax, as much as is sufficient to make into a Plaister.

*That corroborates the Part, extracts the Venome, produceth Matter, and incarns the Wound.*

Take Gums, *Galbanum*, *Sagapentum*, *Opopanax*, *Assa Fetida*, Mirtle, Pepper, Brimstone, of each

each six drams; Pigeons and Ducks-dung, each an ounce; Mummy, half an ounce; the great Comfrey-Roots poudred, three drams; Oyl of St. Johns-wort, as much as sufficeth to make it into a Plaister.

## C H A P. XI.

### *Of particular Wounds.*

IN Wounds of the Head, where the *Pericranium* is hurt, a stitch either by Needle, or Plaister, is not convenient; fat things hurt, but comforting and drying, profit much.

Take Mastick, Myrrhe, Aloes, Sarcocols, each half a dram; Dragons-blood, two scruples; Bole, a scruple; Venice Turpentine, two ounces; Honey of Roses, a little: Make it into a Plaister.

Wounds of the *Brain*, are accompanied with pain of the *Meninges*, and a great Flux of Blood: to which succeeds other Symptoms, and for the most part Death it self. Oyl of Roses applyed warm greatly, *ease*th pain, and fresh Pigeons blood effects the same.

#### *In an Hemorrhage.*

Take Myrrhe, Aloes, Mastick, Dragons-blood, Rhubarb, Red Corral prepared, Hares-hair cut small, of each a dram; Make it into a very fine Powder.

Wounds of the *Face* are not to be stitched; but always

ways care is to be taken, that the Scars may not render it deformed.

In Wounds of the *Eyes*, you must abstain from unctious things. The sound Eye is to be bound as well as the whole. The Head must be placed upright, if there be a *Flux of Blood*; the following things are convenient.

The blood of Turtles, Pidgeons, Hens, Mucilage, of the seeds of Fleawort, of Quinces, Tragacanth, Bloodstone, Ceruse, Tutty, Frankincense, Aloes; the white of an Egg; water of Roses, and Plantain; Decoction of Balautians, Red-Roses, Galls, &c.

Take white Troches, of *Rasis*, prepared Tutty, Aloes Poudred, of each half a scruple; Red Wine, an ounce; Red Rose-water, and Plaintane, of each two ounces; Mucilage, of the Seeds of Fleawort, Tragacanth, of each a dram: Make a *Collyrium*.

In pain, Womans Milk fresh, is good; or the above described *Collirium*, adding to it half a scruple of *Opium*, and applying over it this Cataplasim.

Take of Rotten Apples, two ounces, Flowers of Linseed, half an ounce, Mucilage, Seeds of Fleawort, two drams; Crude *Opium*, half a dram; Yolks of Eggs, as much as is sufficient to make it into a Cataplasim.

A Part of the *Nose* quite cut off, never unites again, although the Wound be but just made; but if it adheres still to the body, 'tis to be stitched to it with a *Needle*.

Wounds of the *Ears*, and *Lips*, find greater benefit from the Needle, than from Ligature.

Wounds of the *Lungs* require comforting and drying

*drying Medicines*; sharp being here very hurtful though used in other Wounds.

*Externally.*

Take Roots of great Comfrey, Tormentil, Cloves, of each half an ounce; Flowers of Red Roses, half a handful, Mastick, Mirrhe, Aloes, of each a dram; boil them in Barley-water, and take half a pint of the strained Liquor, add Syrrup of Mirtles, common and strained Honey of Roses of each two ounces: Make it into a Liment.

*Internally.*

Take leaves of Fluellin, Strawberries, Sanicle of each half a handful; Lungwort, a handful; Roots of Angelica, two drams; Liquorish, a dram; Jujubes, No. xv. Raisons, half an ounce; boil them in Barley-water, and add to a pint and half of the strained Liquor; Syrrup of *Diacodion*, three ounces: Mix them, let them take four ounces of it three or four times a day.

Half a dram of *Sperma Ceti* taken every day, is excellent; but it weakens the Brain:

Wounds of the *Heart* are always mortal, and those that penetrate into the *left Ventricle*, kill suddenly, they seldom living so wounded above six, twelve, or twenty hours, although there are examples produced for it. If wounded into the *right Ventricle*, it permits the Patient to live longer: But that which terminnates in the *substance of the Heart*, grants yet longer time.

Wounds of the *Stomack*, for the most part are left to be Cured by Nature, which here doth Miracles; yet in a *Flux of Blood*, Bleeding is requisite



quisite. In a Wound penetrating its Cavity, all the Tunicles being divided, the Wound of the Abdomen ought to be united by a stitch, a little Orifice being left, through which a Tent is to be put, which must not enter the Wound of the Stomach, but only outwardly touch it; let it be armed with this, or the like.

Take Oyl of Mastick, of Fir-tree, of each an ounce; Manna of Frankinsence, two drams; Powder of the Roots of Tormentil, of the greater Comfrey, of each a dram; Saffron, a scruple; Earthworms half a dram; White-wine, two ounces; boil them to the consumption of the Wine, and make a Liniment.

Take Turpentine, half an ounce; Yolk of an Egg, Oyl of St. Johns-wort, an ounce: Mix it, and make a Liniment.

Wounds of the *small Guts*, sometimes though seldom, may be Cured: this I can prove by a notable example. Those of the *great Guts* are more easie. Where the *small Guts* are hurt, the Chyle, & sometimes the Meat and Drink comes forth through the Wound, there is great pain, with a Fever, and Nauseousness. Where the *great Guts*, the Excrements come out at the Wound, or at least the Tent; the Body is bound: The Wound is forthwith to be stitch't together, and the Gut to be restored into its Natural place, well cleansed with warm water, and this following Powder sprinkled upon it.

Take Aloes, Mastick, Frankinsence, Mummy, Dragons-blood, of each a dram: Make it into a Powder.

Wounds of the *Liver* and *Spleen* require bleeding, and if the Belly be bound, Glisters are daily to be injected; to the Wound it self are to be applied

plyed Astringent and Drying Medicines.

Wounds of the *Kidneys*, if made into the Cavities it self; the Blood that comes forth is Serous, otherwise more pure: This Linament is of great esteem to be used outwardly.

Take Rosin of the Pine, six ounces; Oyl of Bayes, and Turpentine, of each an ounce; Gum Elemne, four ounces and a half: Mingle them.

Inwardly are to be given the Troches of *Alkingi Gordonius*, *de Carabe*, of Sealed-Earth, Bole, Turpentine, and VVound-Drinks.

VVounds of the *Bladder* are generally Cured after the same manner, but 'tis very seldom that they leave not behind them a *Fistula*.

The following Pills are of great use in VVounds and Ulcers in the *Kidneys* and *Bladder*.

Take Mans Bones calcined, three drams; Chalk, Burnt Talk, of each a dram, Troches of VVinter Cherries, three drams; Venice Turpentine a little boild, as much as is sufficient: Make them into Pills about the bigness of little Pease, rowling them in the Liquorish Powder; Let the Patient take Morning and Evening, six of these.

*The end of the second Part of the second Book:*

The

# Verbetty's Chirurgery.

## The third Book of the Second Part of Chirurgery.

### Of Ulcers.

#### CHAP. I.

##### Of the Nature, Differences, Causes, and Signs of Ulcers.



**A**N Ulcer is a Solution of Continuity with Deminution of Magnitude in a soft Part, from a Corroding Matter.

Differences are taken; 1. From the Form of the Ulcer, so 'tis great, little; long, short; broad, narrow; right; transverse; equal, unequal; deep, superficial. 2. From the Part affected, which sometimes is the skin and flesh only, sometimes the Tendons, Nerves, and Vessels that carry the Blood. 3. From the Causes, which shall be presently spoken of. 4. From the Symptoms, so 'tis painful, itching, obstinate, verminous, carious.

N

Cause

*Cause is a sharp and Corrosive Humor, and that is twofold; 1. Internal, as Cholera, Melancholy, Serum, Salt Phlegm, and other Malignant Humors. 2. External, as Burning and Corrosive Medicines; the sweat of man infected with the Itch, Leprosie, or Pox.*

*Signs of Ulcers in general are manifest enough, the particulars you shall have in their places.*

*Prognostick.* By how much deeper the Ulcer is, so much the longer 'tis in Curing. Ulcers in Parts that are subject to much Humidity, are difficultly cured. If an Ulcer cannot be cured in a long time, or when Cicatrized breaks out again, the Cause is, the Bone being foul under it. Ulcers which are at the Nerve, Vein, or Tendon, are dangerous, in Cacochimick Bodies, their Cure is tedious. If the Matter which comes from them be good, it gives hope of an easie Cure. Good Matter is of a middle consistence between thin & thick, white, light, equal, & not at all stinking. That which is ill, is thin and fluid, pale, livid, and of ill smell. Old and inveterate Ulcers are not Cured without danger, except the Body be well Purged, and a good order of Diet observed, otherwise some Diseases will insue.

## C H A P. II.

### *Of the Cure of Ulcers.*

**P**urging and Bleeding are here often necessary, but a good ordered Diet always. Hot Meats and Drinks hurt, as also all Sweet, and Sale things.

things. Outwardly, the Humor ought to be concocted and turned into Matter; the lost flesh ought to be repaired, & then ought to be skind. Remedies necessary to perform these, are Digestives, Sarcoticks, and Epuloticks, which are set down in the seventh Chapter of the second Book of the second Part. We will add some Compounds.

### A Digestion.

Take *Guaiacum* Wood, long Birthwort Roots, of each an ounce; Centaury the less, Wormwood, Agrimony, of each a handful: boyl them in White-Wine; and to two ounces; and an half of the strained Liquor, add of the Meal of Orobush half an ounce; Mirrh poudred, two drams; honey of Roses, two ounces; Spirit of Wine, an ounce; Venice Turpentine, as much as is sufficient to make it into a Linament.

### A Sarcotick.

Take the brown Oyntment of *Felix Wurtz*, three drams; *Basilicon*, half an ounce; *Gum Elemni*, two drams; Turpentine, six drams; Colophony, Mirrhe, Aloes, Mastick, of each half an ounce; Litharge of Gold, three drams; Oyl of Roses, as much as sufficeth to make it into an Oyntment.

### An Epulotick.

Take *Sacchar. Saturn.* Litharge, of each 2. drams; *Lapis Calaminaris*, one dram, Roots of Tormentil, Bilsfort, round Birthwort, Dragons-blood, burnt-Egg-shells, of each half an ounce; Make them into a Powder.

Let it be sprinkled upon the Ulcer, or mingled with



with *Unguentum Diapompholigos*, or *Emplastrum Griseum*, and you will have an excellent Cicatrizing Plaister.

Oftentimes there is some distemperature present, impeding so the Cure, that you must not expect *this*, before the Chirurgion hath corrected *that*.

*Difference.* ] This distemperature is fourfold, caused from Heat, Cold, Moisture, and Dryness.

*Signs.* ] In a *hot* distemperature the Matter is sharp, the edges of the Ulcer red, and great pain. In a *cold* the edges are soft, white, & where things succeed not well, livid. In a *dry*, the edges are dry and hard, little or no Matter. In a *moist*, the flesh is soft and loose, often increasing, great quantity of Matter.

*Prognostick.* ] The Cure of all Ulcers is very difficult, which hath a dry distemperature joyned with them.

*Cure*, in a *hot distemperature*, Plantain, Endive, Nightshade, Bole, burnt Lead, Cadmia, *Saccharum Saturni*, Whites of Eggs, *Oxycratum*, Turpentine, Oyl of Roses, Violets, Mertles; Oyntments of Ceruse, white Camphorated, Roses.

In a *cold*, Oyl of St. *Johns*-wort, Nard, Orrise, Camomile, Rue, Dill, Rosin of the Larch Tree, Spirit of Wine, Plaister of Betony.

In a *dry*, Let the Part be fomented with warm water, and the Chirurgion must abstain from drying Medicines, till this distemperature be wholly gone; seeing otherwise the Cure is difficult.

In a *moist*, Cyperus Roots, St. *Johns*-wort, Wormwood, Sage, Horehound, Betony, burnt Vi-riol, burnt-lead, Litharge, Ceruse; Red Lead, Frankincense,

kinfence, Maſtick, *Emplaſterum Gryſeum de minio*; as all things that are very drying.

Sometimes to this diſtemperature of the Part is joyned a Flux of Humors, where *Purging*, *Repellents*, and *Intercipients* are neceſſary. Iſſues in this caſe are of great uſe, eſpecially in old Ulcers. No fat or Uñctious Medicines muſt be here applied, but ſtrongly drying, which though very excellent, ought often to be renewed.

Sometimes there is *proud fleſh*, of the taking away of which, look in the preceding Book.

The *edges* of the *Ulcer* are ſometimes *Callons* where Emollient, and gently diſſolving Medicines are convenient, *viz.*

Take Muſſilage of Marſhmallow-ſeeds, and Fenugreek-ſeeds, of each two drams; Turpentine, an ounce; Oyl of ſweet Almonds, white Lillies, of each three drams: Make it into an Oyntment.

If this and the like are not ſufficient; the green Water ſet down in the fourth Chapter of the ſecond Book is very convenient; but if this ſufficeth not, the edges ought to be ſcarrified, or the Calloſity is wholly to be taken away.

*Worms* ſometimes breed in Ulcers; where you perceive them, draw them forth with a convenient Inſtrument; but if they ſtick faſt to the fleſh, apply the following Medicines.

#### *Medicines againſt Worms.*

Wormwood, Horehound, Centaury the leſſe, Germander, Dictany, Gentian, Aloes, Mirrhe, Bulls-Gall.

Take Aloes, Meal of Lupinus, of each two drams; Mirrhe, Verdigreſſe, of each a dram; Bulls-

Gall, half an ounce, Honey, as much as sufficeth to make it into a Liniment.

### CHAP. III.

#### *Of an Ulcer with foul Bones.*

**I**T falls out sometimes that the Bone which lies underneath the Ulcer to be foul : Bones are corrupted, and contract a rottenness, either from the *long Flux of Humours*, or from the *Acrimony*, and *Malignity of them*, or from an *Occult quality*, or from a *Contusion*, in some manner injuring the Bone it self, or from *sharp Medicines*.

*Signs* of Corruptions are many ; where the Bone lies open to the sight, at first it appears of the colour of fat, then yellow, afterwards black, and unequal ; but where it cannot be seen, Chirurgions may judge that there it is a corruption.

1. If a *Fistula* preceded, or the Ulcer hath been of long continuance. 2. If the Ulcer being skin'd, break out again. 3. If the flesh above it becomes loose, spongy, pale, or livid. 4. If with the Probe you find no resistance, but an inequality. 5. If the Matter be much, thin, and stinking.

*Prognostick.* ] If the Caries be near the Nervous parts, or in the Joynts, or about the Tendons, Arteries, or Veins, 'tis not easily Cured ; but for the most part the Tendon and Nerve are corrupted with it : No Ulcer can be cured, whilst the Bone remains foul.

*Cure.* The corrupted Bone ought to be corrected, either with Medicines, or with Chirurgery, or

or by both. Therefore the flesh must be divided as soon as may be, that the Carious Bone may be hid open ( lest some considerable Nerve, Tendon, or Artery be hurt ) according to the length of the part, and the ductus of the Fibres, not transverse; then let those Medicines be applyed that may separate the corrupted Bone from the sound; and that may preserve the sound from corruption.

*Medicines against corruption of the Bone.*

Roots of round Birthwort, Bryony, Orise, Dragons, Horestrong *Garicum*; bark of the Pine, Aloes; *Euphorbium*, Mirrhe, Alom. *Chalcanthum*, Lime; *Chrysocola*, burnt Pumice, the scales of Brasse; *Aqua fortis*, Spirit of Brimstone, of Vitriol, Salt, Tartar, Oyl of Vitriol, Brimstone, Antimony.

Take Mummy, Sarcocols, of each half a dram; *Euphorbium*, a dram: Mix them, and make a Powder.

Take Roots of round Birthwort, Orise, Horestrong, of each half an ounce; Mirrhe, Aloes, of each a dram and half; bark of the Pine, Scales of Brasse, of each a dram; Earthworms, two drams; Honey, as much as sufficeth to make it into an Ointment.

Take Juice of Celandine the greater, two ounces; Spirit of Wine, an ounce; Mirrhe, Aloes, of each two drams; White Vitriol, a Scruple; Mingle them for an Injection.

If the corruption of the Bone be so great, that it cannot be removed by Medicaments, then we must come to Chirurgery, and either scrape the

foul Bone, if the corruption be small, or *Perforate* it, if great, or rather take away the corrupt Bone by *actual Caustry*.

## CHAP. IV.

### De Ulcere Depascente, &c.

**A**N Ulcer further and further spreading, is cal'd *Depascens*; and if it be with putrefaction is cal'd *Noma*, if without it, *Phagedena*; if only in the skin, *Herpes*; if ill natured, *Cacoethe*.

*Cause*, is the salt *Serum of Blood*, salt *Phlegm*, burnt *Choler*, or other *Malignant Humor*.

These Ulcers can scarce be cured, unless the *Cause* be first removed, and the whole Blood purified: therefore here must be observed a good Diet, often *Purging*, and sometimes *Bleeding*.

#### External Medicines for Depascent Ulcers.

- *Plaintane*, *Nightshade*: Flowers of Red Roses, *Balaustians*, *Cypress-Nutts*, *Pomgranate-rinds*, *Frankinsence*, *Mastick*, *Tutty*, *Ceruse*, *Litharge*, *Red-Lead*, *Burnt-Lead*, *Brimstone*, *Pepper*, *Ginger*, *Mercury*, *Ung. Aegyptiacum*, *Fuscum*, *Dispermophiligos*, *Emplast. de plumbo*, *de minio*, *Grisum*, *de ranis cum Mercurio*.

Take flowers of Red Roses, *Balaustians*, of each a handful; Leaves of *Plaintane*, half a handful; *Cypress-Nutts*, *Mertle-Berries*, *Pomgranate-Rinds*, of each half an ounce: boil them in Red Wine.

Wash the Ulcer with it, then put over this following.

Take



Take prepared Tutty, half an ounce; Burnt-Lead, wash'd Ceruse, of each an ounce; Bole-Armenick, half an ounce; *Ung. Ægyptiacum*, as much as is sufficient to make it into an Ointment.

Or,

Take Long-Pepper, half a dram; Ginger, a scruple; Flower of Brimstone, Litharge of Gold, each two drams; Gunpowder, a dram; *Ung. fusci of Felix Wurtz*, three drams; *Ung. Album, Camphoratum*, as much as sufficeth; Make it into an Ointment.

Take Maltick, Frankinsence, Mirrhe, of each three drams; Litharge of Gold, Burnt-Lead, of each half an ounce; Quicksilver extinct in Turpentine, two drams; Brimstone, half an ounce; Pitch, and Wax, as much as is sufficient to make it into a Plaister.

Concerning the Cure of this Ulcer, 'tis to be noted, 1. External Medicaments ought to be changed every three or four dayes, for Nature rejects the best, longer applyed. 2. They ought not to be dress'd above once or twice a day, except the Matter be very sharp, that the Medicine may not be disturbed in its operatin. 3. Repellent, and Mercurial Medcines are not to be used, except with continual Purging you drain the Body of its impurities. 4. These Ulcers are seldom Cured, without the use of Purging or drying Decoctions, made of *China, Guaiacum, Sassa,* &c.

## CHAP. V.

*Of Fistulae.*

**A** Fistula is a long narrow hollowness, or a sinuous Ulcer, narrow and Callous, not easily receiving Cure; for the most part taking its beginning from an Abscess.

*Difference,* are *straight, oblique, simple, manifold.* that is, if having many hollownesses; some going to the Bone, some to the Veins, Tendons, or Nerves.

*Signs.* ] The edges of this Ulcer are white, hard, without pain, or with little, sometimes moist, but commonly dry: Outwardly the Cavity may be perceived in one place or other by the fingers; in which also sometimes there is a noise perceived, and the Matter now in lesser quantity, otherwhiles in greater, is prest out through the Orifice of the Fistula: By a Probe we can search the Cavity of a straight Fistula, but in an oblique, we use a Wax Candle instead of a Probe: That is more convenient when the Fistula penetrates to the Bone, this when it is in the fleshy and sensible parts: *If the Fistula remain only in the fleshy parts,* that which is touched by the Probe, is soft, and the Matter that comes out is white, equal, and in great quantity. *If it extend to the Nerve,* there is great pain in searching it to the bottom of the hollowness, and the Matter is Fat and Oily, but is less in quantity, and the action of that Member to which the Nerve goes to, is rendered

and very uneasy : If it passeth to the Bone, which is touched by the Probe, is hard, not yielding, and painful; where the *Periostium* is not consumed, the Bone is rough, and seems unequal to the touch; if the Bone be foul, the Matter is black, stinking, and very thin; if the Cavity joyns to a Vein, the Matter is like dregs, but redder and thicker, where the Vein is eroded; if it penetrates the Arteries, that which comes forth is thin, and shining, and comes forth with a leaping.

*Prognostick.* ] All Fistules are of hard Cure; some incurable, others that ought not to be Cured; to wit, those by which the superfluous Humors have for long time used to vent themselves.

A recent Fistula, and not deep, in a young body, and otherwise sound, is easily Cured; an old deep Fistula, having many Sinu's in an Antient, Emaciated, Cachochimick body is much difficult.

These are also difficultly Cured, yea, for the most part incurable, which touch the Tendons, Nerves, Veins, Arteries, Bones, and those that are in the Joynts, Vertebra's, Cavity of the Breast, and lower Belly, the Womb, Bladder, or Guts.

Fistula's are wont to come in those places where Nature is accustomed to discharge her self of vitiated Humors, to wit; in the Abdomen, Groins, Buttocks, Fundament, Cod, and Perinaem.

Where the Edges are not very hard, but somewhat soft and mattery, they do promise speedier Cure.

Cure of Fistula's are twofold, one Real, and the other Palliative; by this the Fistula is dried within, and skinned without; the hollownets nevertheless,

theleſs remaining; commonly continuing for a little while cloſed, but eaſily breaks forth again, except by a good Diet, often Purging and Bleeding it be perfectly Cured: the Real Cure is performed in this manner; good Diet, Purging, Bleeding, and Wound-Drinks effects here very much, but the Hemorrhoids flowing more. Natural Baths do oftentimes Cure the greateſt Fiſtula's, in defect of them may be prepared Artificial of Brimſtone, Alom, Salt, and Tartar, boiled in Water, afterwards let the Fiſtula be dreſt according to Art: Externally, the Part is to be Corroborated, the Humor contained in the Sinus to be dried, but eſpecially the Calloſity of the edges is to be taken away, therefore are Medicines for this purpose to be uſed; by whoſe help many Fiſtulas have been Cured; but theſe not being ſufficient an actual Cantery is to be applyed, having firſt divided the edges, for which purpose the Syringe of Fabricius Heldanus is a moſt uſeful Inſtrument,

#### Medicines for a Fiſtula.

- Roots of Hellebore, Cuckopintle, Gentian, Birthworth; *Eaſphrobium*; Juice of Celandine, Smallage, Dragons, Spurge, Flax; Strong Vinegar; Lye; Lime; Alope, Vitriol; Verdigreſſe, Orpine; Mercury precipitate, and ſublimated: the Phlegme, and Spirit of Vitriol. Ung. *Aegyptiacum*, *Fuſcum*.

#### A Corroborating and drying Plaiſter.

- Take Maſtick, Frankincenſe, Pomgranate-rinds of each two drams; finely ſearced

three drams; Red-Roses, Murtle-Berries, of  
each a dram; Yellow-Wax, Rosin of the Pine,  
of St. *Jobns*-wort, of each an ounce: Make  
into a Plaister.

*An Oyntment.*

Take the Juice of Smallage, two ounces; of  
Slandine, two drams; of Onions, one dram;  
Honey of Roses, three ounces, Turpentine, as  
much as is sufficient to make it into an Oynt-  
ment.

*Another.*

Take Juice of Flowerdeluce, an ounce; Of Ce-  
landine, half an ounce; Red-Wine, six drams;  
Honey, four ounces: let them boil a little, then  
Add of Aloes, Mirtle, of each half a dram; White-  
Vitriol, a scruple; Litharge, two drams; Tur-  
pentine a little: Make it into an Oyntment.

*Another more Excellent.*

Take Powder of Bryony-Roots, a dram; Fran-  
ciscence, Mirrhe, of each two drams; Verdigreese,  
half a dram; *Sal Armoniac*, a scruple; Hoggs-  
grease, Oyl of Olives, of each as much as sufficeth  
to make into an Oyntment.

*Another of greater Vertue.*

Take White Vitriol, four ounces; Alom, Ver-  
digreese, of each half an ounce; Strong-Vinegar,  
six ounces. Calcine them in a luted Vessel, and  
powder it.

Mix it with *Ung. Ægyptiacum*, and arm the  
Tent with it.

The Brown Oyntment of *Felix Wurtz*, is a  
most



most Excellent Medicine in this Case, if it be reduced by greater boyling, into the form of a Suppository, and so put into the Fistula: You do well to prepare it your self, for 'tis not right made by every one: The following Suppositories are Excellent, especially in Fistulae of the Fundament, and other soft Parts.

Take Agrimony, half a handful; Scordium a pugil; Flowers of St. Johns-wort, two pugils; Frensh-Barley, an ounce, boyl them in White Wine, and strain them, adding of Virgins-Breast, four ounces: Boil them to a thicknes, then add of Male Frankinsence, choice Mastick, of each two drams; Red-Mirrhe, a dram and half; Sacacols, three drams; White-Vitriol, a dram: make them into Suppositories.

## CHAP. VI.

### Of Burns.

**B**urning is a solution of continuity, caused by an External burning matter always hurting the scarf-skin, for the most part the skin, and sometimes also the Muscles, Veins, Nerves, and Tendons.

*Difference.* ] It admits of three sorts: 1. Sometimes there is a heat, and pain, at least in the Part affected, caused from burning; and except Remedies are presently applyed, the Scarf-skin is separated, and divided from the Skin, and Blisters are raised, which contains in them clear water. 2. Sometimes the Skin it self is burnt, then the

sently a Blister is raised, but no Escar made. Sometimes also the subjacent flesh is burnt, here the Skin is black, and void of sense, and after the Escar falls off, leaves a deep Ulcer.

These differences are to be allowed to the Causes; for Lead, Tin, Iron, Powder, Lightning, do vehemently burn; Oyl, Vernice, Pitch, and Wax, less: Straw, Water, Flax, and the like, least of all.

Signs, by what hath been spoken, are manifest enough.

Prognostick.] A deep and great Burn, very seldom but leaves ugly Scars behind it; Burning from Lightning, is for the most part mortal: That which penetrates to the great Vessels, generally occasions a Gangrene; it to the Intestins, incurable; burns of the Eyes, and Groins very dangerous. If a hairy part be burnt, it remains bald, never hair grows there again.

Cure.] The chief care must be to draw out the Fire, by which in a light burning you preserve from Blisters and Ulcers; in a great one, you free from all danger, therefore what Medicine soever is at hand, is presently to be used; let the hurt Part be held to the fire, and fomented with warm Water, Ink, Lye, or let there be applyed Soot, or an Onion beaten with Salt, or any of the following

#### Medicines in Burning.

Roots of White Lilies, Liquorish; Leaves of Bete, Colworts, Hemp, Onions, Garlick, Henbane, Tobacco, Leeks, St. Johns-wort, Flowers of Camomile, Melliloté, Elders; Seeds of Quinces, of Line; Camphire, Mirrhe, Olibanum, Soot, Whites

Whites of Eggs, Hoggs-fat, Pigeons-dung, Sheeps-dung, Hens-dung, Nitre, Ceruse, Ink, Brine ; Lye ; Oyl of Nuts, Rape, white Ointment with Canphire, Plaister of Red Lead.

*An Ointment.*

Take Juice of Onions, two ounces ; Venice Sope, three ounces ; Common Salt, two drams ; Hoggs-grease, two ounces , Washt Lime , three drams ; Oyl of Rape, Muffilage of Quince-seeds, of each an ounce ; Turpentine , as much as is sufficient to make it into a Liniment.

*Another, by whose means a poor Souldier became rich.*

Take Leaves of new gathered Sage, a handful ; of Plaintane , two handfuls ; fresh Butter not salted, six ounces ; New Hens-dung , and the whitest as you can, three ounces ; fry them together for the space of a quarter of an hour , press them hard out, and reserve the prest out Liquor for your use.

This Ointment is Excellent in Burning of all sorts, even in the greatest ; it being melted, let the hurt Part be often anointed with it in a day, then laying over it a fresh leaf of Colwort, Bete, or Plaintane.

*If any Pustules are raised*, and yet the Burn not great, open them the third day, and let not the opening be prolonged further, least there follow a Corrosion.

*If the Skin be wrinkled and dried*, all the Pustules are presently to be cut, then let the precedent Ointment, or this following be applied.

Take

Take Oyl of Violets, white Lillies, sweet Almonds, fresh Butter, of each an ounce; Mullilage of Fleawort-seed, Meal of Marshmallows, of each an ounce and half; Saffron, half a dram; Soot, *Ung. Basilicon*, of each an ounce: Make it into an Ointment.

If there be an Escar, let its separation be endeavoured the first or second day, for which the now prescribed Ointment is exceeding good; but if it separates not, then Incision is to be made unto the sound flesh; then when 'tis separated, 'tis to be Cured as a common Ulcer.

If there be danger of a *Gangrene*, or already present, it requires its Cure, which is already in its place set down.

Where the Eyebrows, Lips, Fingers, or Toes are burnt, a clean Linnen Cloth, or Plate of Lead is to be put between them.

If a tender part be burnt, you must abstain from the use of Onions, Sope, Salt, and such like sharp Medicines.

That ugly *Cicatrices* may not be left, strong Drying Medicines must not be used.

## CHAP. VII.

### *Of particular ulcers.*

**I**N an Ulcer of the Head, neither *Unctious* or *Repellent Medicines* are convenient. If the ill quality of the Humor requires the use of Mercury, great care is to be had, that it be not crude, but well prepared; which also ought not to be applied

plied where the Ulcers are about the Sutures seeing a salivation may be easily raised, difficult afterwards to be suppressed.

*Ulcers of the Eyes*, for the most part induce blindness, especially where the Horny Tunicle is wholly Corroded, so that the Watry Humour is let out, as also oftentimes the Christalline: an Inflammation generally is very painful, which is forthwith to be removed, by those Remedies delivered in the seventeenth Chapter of the first Book. To the Ulcer it self, first, Absterfive; then Cicatrizing Medicines are to be applied.

*An Absterfive Collirium.*

Take White Amber, Red-Mirrhe, of each half a scruple; Eastern-Saffron, six grains; White one Egg, Sugar-Candy, a dram; Eyebright-water, two ounces and an half: Mix them.

*Another.*

Take Aloes, Frankinsence, prepared Tutty, of each half a scruple; Glass of Antimony, Gum Tragaganth, a scruple; Celandine-water, three ounces: Mix them.

*Or,*

Take Red Coral prepared, Frankinsence, of each half a dram; White Troches of Rhasis prepared Harts-horn, of each a scruple; Burnt Lead, fifteen grains; Crude Antimony, a scruple; Honey of Roses, as much as is sufficient to make it into an Ointment.

*A Cicatrizing Collirium.*

Take Burnt-Lead, White Troches of Rhasis  
Sarc-



Sarcocolls, Sugar of Saturn, of each half a scruple,  
Rose-Water, four ounces : Mix them.

Ulcers of the *Nase* most commonly yeeld an ill  
smell, whence they are called *Ozana*. Cause is  
sharp, bilious, salt, or Malignant Humor, which  
sometimes corrupts the Bones themselves, and  
chiefly the Cartilage, so miserably deforming the  
face. They are hard of Cure, which generally re-  
spects the whole Body, at least the Head, which  
requires corroborating, and moderate drying.

External Applications are to be *abstersive*, and  
because of the humidity of the Part, somewhat  
drying. The juice of *Scharley* mixt with Honey  
of *Roses*, is excellent here.

Take one Portgranate sliced, Litharge of Gold,  
two drams ; Red Lead, a dram : Burnt-Alom, a  
scruple ; *Mercurius dulcis*, half a dram ; Whitest  
Sugar, an ounce ; White-Wine, six ounces : Let  
them boil a little, and preserve the strained Li-  
quor for use.

Take Burnt-Lead, washt Ceruse ; prepared  
Tutty, Litharge, of each two drams ;  
Frankinsence-Barke, one Dramme ; Mirrhe,  
Round-Birthwort, *Mercurius dulcis*, of each half  
a dram ; *Ung. fuscum* of *Felix Wortz*, three drams ;  
*Ung. Album, camphorat.* as much as sufficeth to  
make a Liniment.

Fumes of the following Powder put upon  
Coles, is very good, provided it be used cauti-  
ously, and not above once, or at most twice a  
day, least a salivation should be raised, which  
also will cure the Ulcer : The quantity of a Nut-  
meg is sufficient for a Dose.

Take Bensoes, Sandarach, Mastick, Frankin-  
sence, Storax, of each a dram. Artificial

plied where the Ulcers are about the Sutures, seeing a salivation may be easily raised, difficultly afterwards to be suppressed.

*Ulcers of the Eyes*, for the most part induce blindness, especially where the Horny Tunicle is wholly Corroded, so that the Watry Humour is let out, as also oftentimes the Christallinean Inflammation generally is very painful, which is forthwith to be removed, by those Remedies delivered in the seventeenth Chapter of the first Book. To the Ulcer it self, first, Absterfive; then Cicatrizing Medicines are to be applied.

*An Absterfive Colirium.*

- Take White Amber, Red-Mirrhe, of each half a scruple; Eastern-Saffron, six grains; White of one Egg, Sugar-Candy, a dram; Eyebright-water, two ounces and an half: Mix them.

*Another.*

Take Aloe, Frankinsence, prepared Tutty, of each half a scruple; Glass of Antimony, Gum Tragaganth, a scruple; Celandine-water, three ounces: Mix them.

*Or,*

Take Red Coral prepared, Frankinsence, of each half a dram; White Troches of Rhasis, prepared Harts-horn, of each a scruple; Burnt-Lead, fifteen grains; Crude Antimony, a scruple; Honey of Roses, as much as is sufficient to make it into an Ointment.

*A Cicatrizing Colirium.*

Take Burnt-Lead, White Troches of Rhasis, Sarc-

Sarcocols, Sugar of Saturn, of each half a scruple;  
Rose-Water, four ounces: Mix them.

Ulcers of the Nose most commonly yeeld an ill  
smell, whence they are called *Ozana*. Cause is  
a sharp, bilious, salt, or Malignant Humor, which  
sometimes corrupts the Bones themselves, and  
chiefly the Cartilage, so miserably deforming the  
Face. They are hard of Cure, which generally re-  
spect the whole Body, at least the Head, which  
requires corroborating, and moderate drying.

External Applications are to be *abstersive*, and  
because of the humidity of the Part, somewhat  
drying. The juice of *Scharley* mixt with Honey  
of Roses, is excellent here.

Take one Pomgranate sliced, Litharge of Gold,  
two drams; Red Lead, a dram: Burnt-Alom, a  
scruple; *Mercurius dulcis*, half a dram; Whitest  
Sugar, an ounce; White-Wine, six ounces: Let  
them boil a little, and preserve the strained Li-  
quor for use.

Take Burnt-Lead, washt Ceruse; prepared  
Tutty, Litharge, of each two drams;  
Frankinsence-Barke, one Dramme; Mirrhe,  
Round-Birthwort, *Mercurius dulcis*, of each half  
a dram; *Ung. fuscum* of *Felix Wortz*, three drams;  
*Ung. Album, camphorat.* as much as sufficeth to  
make a Liniment.

Fumes of the following Powder put upon  
Coles, is very good, provided it be used cauti-  
ously, and not above once, or at most twice a  
day, least a salivation should be raised, which  
also will cure the Ulcer: The quantity of a Nut-  
meg is sufficient for a Dose.

Take Bensoes, Sandarach, Mastick, Frankin-  
sence, Storax, of each a dram. Artificial

Cinabar, half an ounce : Make it into Powder for Fuming.

Ulcers of the *Mouth* require, often *Purgings* sometimes *Bleeding*; and if there be Malignant *Antivenereal*, *Sudorifick Decoctions*, which are here of great use.

*External Remedies* also here are absterfives and dryers: I have tryed the following to be of singular vertue.

Take Oake-leaves, a handful; Flowers of Roses, Balauftians, of each a pugil; Pomgranate-rinds, two drams; Burnt-Alom, two scruples; White-Vitriol, half a scruple: boil them in Red Wines to half a pint of the strained Liquor, add Honey of Roses, *Rob Diamoron*, of each an ounce. Make a Gargarism.

Or,

Take common Chalk, burnt-Talk, Red-Lead Burnt-Alom, of each a dram; Bole-Armonick, two drams; *Mercurius dulcis*, half a dram; Vitriol, a scruple: boil them in Whitewine, and to ten ounces of the Liquor, add Syrup of Comfrey of *Fennel*, two ounces and an half: Mix it for a Mouth-Water.

Or,

Take Burnt Talk, Flower of Brimstone, Bole-Armenick, Frankinsence, Comfrey-Roots the greater, Pomgranate-rinds, of each a dram; Burnt-Alom, two scruples; Verdigreese, half a dram; Honey of Roses, as much as sufficeth to make it into a Liniment.

Or,

Take *Ung. fuscum* of *Felix Wertz*, three drams; Honey of Roses, two drams: Make a Liniment.

The same for Ulcers of the Nose, is here useful,

as also common Ink. If Medicines effect nothing, an actual Cautery must be used.

An Ulcer of the *Bladder* is troublesome, and for the most part incurable, having its beginning from a Wound, the Stone, a sharp Humor, or Diarrick Medicine, it requires many Internal, and External Remedies : which that we may not exceed our bounds, we leave to be prescribed by the Physitian, except some few, whose vertue hath been often experimented by us.

Take Roots of round Birthwort, Comfrey the greater, Osmond-royal, of each half a dram ; Mirrhe, Frankinsence, Storax, Mastick, Gum Tragacanth, Seeds of white Poppy, Henbane, of each a scruple ; Juice of Liquorice, half a dram ; Venice-Turpentine, as much as to make them into Pills of the bigness of a little Pea.

Or,

Take Troches of *Alkakiagi, de Carabe*, Burnt-Talk, of each half a dram ; Bole-Armenick, Seal-d-*Earth*, Mans-Skull, of each a dram ; Venice-Turpentine, as much as to make them into Pills of the bigness of a little Pea,

Let the Patient take six of these Pills, or of the former, every day Morning and Evening.

Take Lime-water, three ounces ; Plaintane, two ounces ; White Troches of *Rhassia*, a dram : Mix them for an Injection, to be used twice or thrice every day.

Lime-Water in this place is nothing else than common Water wherein quick Lime hath been quencht : have a care of making it too strong.

Ulcers of the *neck of the Bladder* are cured after the same manner, though indeed with greater, and those of the *Penis* yet far more easie, al-



though contracted from a virulent *Gonorrhoea*. These are to be known by the pained Part, and by the coming forth of the Matter, before or after making of the Urine; except timely you endeavour their Cure, the Disease slides inwardly, and will perforate either the Bladder, or *Perineum*: sometimes one or more *Caruncles* here offer themselves, which because they cannot alwayes be Cured by Medicaments, they may be taken away by Chirurgery, by the assistance of an Instrument described by *Fary* and others; yet many times have I cured these Excreescencies, by using of small Suppositories made of the following Ointment, thickned by gentle boyling.

Take *Ung. Fuscum* of *Felix Wurtz*, Honey of Roses, of each two drams: Make it into an Ointment.

In these *Caruncles*, before they are fixt, we defect much by *Vulnery*, *Sudorifick*, and *Antivenereal* Decoctions, outwardly using the following Medicine.

Take *Litharge* of Gold, Flower of Brimstone, of each three drams; prepared Tutty, two drams. Red-lead, half a dram; *Ung. Aegyptiacum*, a dram; Honey of Roses, as much as is sufficient to make it into an Ointment.

Anoint then a Wax Candle with this Ointment, and put it into the Urinary Passage, renewing it twice or thrice a day, until there is an absolute Mundification. Its Consolidation is performed by no better Medicines (that I know of) than by the *Amalgama* of Mercury, described in the seventh Chapter of the second Book, if it be mixt with *Ung. Diapompholigos*; and the Wax Candle anointed with it, and put into the Urethra, as is already said.

If the neck of the Womb be Ulcerated, though slightly, they are of difficult Cure, and if those Ulcers are negligently handled, they produce grievous Symptoms, and sometimes a Gangrene; after Purging, and the use of Vulnerary, and Venereal Decoctions, as also Bleeding, the following is good.

Take Roots of Orise powdred, Litharge of Gold, Flower of Brimstone, of each two drams; Mastick, a dram; *Mercurius dulcis*, half an ounce, *Ung. fuscum*; of *Felix Wurtz*, two drams; Honey of Roses, as much as sufficeth to make it into a Liniment.

#### A Fume.

Take Gum of Juniper, an ounce; Mastick, Mirrhe, *Laudanum*, of each two drams: Make it into a Powder.

If they had their Original from the French Pox, add to this Powder a dram of Cinnabar, and use it twice a day.

Ulcers of the Leggs, especially those that are upon the Shins, occasion great trouble to the Chirurgeon, because the Humidity of the whole body continually flow to those parts, for which reason the Medicines are used to little purpose, except the part is well rowled from the Foot upwards, and the body once or twice a week well Purged.

A Plate of Lead, or Plaister of Lead, or *Diapempholigos*, of *Minium*, *Griseum*, or the following, which is to be esteemed in this case.

Take the Plaister of Lead, *Griseum*, of each an ounce; Litharge of Gold, Ceruse, of each three drams; Sugar of Saturn, half a dram;

O 4

Gum

Gum Elemny, two drams : Make it into a Plaister.

*Another very good in these, or, other Malignant Ulcers.*

Take *Album Græcum*, froth of the Sea, of each an ounce; Oyl of bitter Almonds, Sheeps-fuet, six ounces; White Wax, as much as sufficeth to make it into a Plaister; to which if you please you may add some *Diapompholigos*.

*Fac totum Magistri Christiani.*

Take Oyl of Roses, twelve ounces; Ceruse, Mulsilage of the Roots of Comfrey, of each six ounces; White Wax, four ounces; Litharge of Gold, Red-Lead, *Lapis Calaminaris*, of each three ounces : Make it into an Ointment according to Art.

*Another.*

Take Flowers of Red-Roses, one ounce; Balsamians, two drams; Elder-flowers, an ounce and half; Roots of Tormentil, Round-Eirthwort Roots, Long-Pepper, *Lapis Calaminaris*, of each an ounce; Prepared Tutty, two drams; Bole-Armenick, half an ounce; Litharge of Gold and Silver, of each an ounce and half; Rose-water, five ounces; French-Wine, twelve ounces: Mix them.

*The end of the third Book, of the second Part.*



## Verbetty's Chirurgery.

### *The 3d Part of Chyrurgery;* or, the Practical *Anatomy,* in five BOOKS.

1. *Treats of the Parts in general.*
2. *Of the Head.*
3. *Of the Breast.*
4. *Of the lower Belly.*
5. *Of the Joynts.*

#### C H A P. I.

#### *Of the Practical Anatomy.*

#### THE PREFACE.



Thou which desirest to know thy self,  
 come hither and view; the little  
 World will declare how thou ought-  
 est to esteem of the great one. The  
 Inemendable Architecture of the  
 Creator, the Incomprehensible Es-  
 sence of the Soul, as also the frail-  
 ty of thy Terrestrial Mansion, will make thee esteem  
 more

more those things that are above thee, to use those things better than are within thee; and carry thy self with a more compassionate mind towards thy Neighbour: Although thou art here a stranger, thou oughtest not to walk as a stranger in these things; which, that thou mayest perform thy duty aright, it is so necessary a thing to know: Never canst thou better use this, either to the greater profit of thy self, or others, than when thou hast diligently inquired of what thou wast made of. To which purpose, First we will shew thee the simple Parts, and their use. Then, after the Description of the whole Body; all the Compounded Parts.

### The Chyrurgical Use.

Seeing 'tis very necessary to know the temperaments of men by their outward aspects, because they give the Rules of what is to be done in the Curing of each Disease, we have thought it convenient to describe them in this place.

- The *Sanguine* abound with hair, but lank, and yellowish; in process of time declining into blackish, *Handsome, Red-checked, Fleehy, Strong*. When young, addicted to *Venery*, not enduring *Labours*, easily *Sweating, Physical, affable* in their Conversation, and Discourse; not *suspicious*, equally prone to *laughter* and *tears*; they sleep soundly, their Dreams are pleasant: *Pulse* is great and strong; *Urine* yellowish, and in great quantity *soluble*; They hate Women, and, except in their company, seldom think of them.

They bear *Bleeding*, provided it be at a fitting time, and in a convenient quantity; otherwise they easily fall into the *Droptick*. Strong *Purges*,  
to wit



to wit, *Euphorbium*, *Scammony*, *Coloquintida*, they cannot bear; though gentle and easie they may, as *Cream of Tartar*, *Manna*, *Tamarind*, *Fruines*, *Syrup of Roses with Senna*, *Syrup of Succory with Rubarb*, *Pulp of Cassia*, *Electuaries of Diacatholicum lenitive*, &c. as they easily fall into a Disease, so they quickly again recover.

The *Cholerick* have black *Hair*, and for the most part Curled. *Lean*, but very strong; *Coition* profitable; they are judicious and swift in action, avoiding idleness; they trust neither the words or gestures of men. Soon subject to laughter, if the thing require it, otherwise grave. When irritated, addicted to strike; more inclined to Drink and Watching, than to Eating and Sleep; their Dreams are of Fire, Thunder, Quarrels, Battles. Pulse strong, quick, and great: Urine high coloured, as also their Excrements.

*Choler* requires not Bleeding, yet permits it, if there be a great quantity of Blood joyned with it, but it must neither be excessive, or oftner than necessary repeated, lest the *Choler* overpowers its strengths; gentle Purges relieve it, but strong irritates it; it produceth vehement and dangerous Diseases, and for the most part short.

*Pblegmatick* have long Flaxen Hair, which easily falls off, and as easily grows again: Pale-faced, cold, and weak Body: A great while before they desire Marriage, and not long fit for Venus's Embraces, slothful, unfit for Conversation, not solicitous about Publick Affairs; difficultly brought to Laughter or Anger, which then lasts not long: They Eat and Drink little, prone to sleep, Dreams are of Fish, of the Water, and Rain; Pulse small and slow: Urine pale, and sometimes

times thin, but generally thick, and darkish, the Belly *sollulible*; they bear not *Bleeding*, except upon necessity; they endure strong *Purging*; their *Diseases* are long, but not *dangerous*.

The *Melancholick* are almost destitute of *Hair*, which is lank and black: Of a *grim* Countenance, the whole skin livid; *Lean, slow*, and addicted to *Venery*, *Prudent*, *Morose* in Conversation, readier to give Counsel to others, than to themselves; not subject to *Laughter* or *Anger*, but long before appeased; they *Eat* and *Sleep* much; *Urine copious*, *Excrements* little; grievous *Dreams*; *Pulse*, small, slow, and hard.

*Bleeding* is hurtful, *Purging* profitable; the *Diseases* which it begets, are stubborn, and tedious, and oftentimes more *dangerous* in the end than in the beginning.

Let these common Signs suffice in this place. But 'tis to be observed, that the *Temperaments* are mixt, and then the Signs are also. Yea many *Mutations*, *Vices*, and *Dissemblations*, as also *Vertues*, and *Ingenuity*, may be attributed to them, which is your part judiciously to distinguish; but we assent not to *Galen*, who held that the *Disposition* of the *Mind* rely upon the *Temperaments*.

## CHAP. II.

### *Of the Parts in general.*

**A** Part (*properly so call'd*) is a firm, limited Body, which is nourished by other living Parts, but doth not nourish; disposing the Action to the advantage of every Part, or for special use.

It is distinguished, 1. Into the *Principal Parts*, or those *not so*: *Principal* are those that perform some Noble Operation common to the whole Body, as the Heart, Liver, Brain, Testicles: *Those not so*, are those that serve the Principal, and whence they are call'd their Servants, as the Eye, Ear, Hands, &c.

This distinction pleaseth Anatomists (whom I much esteem) yet not me: For if the Liver, and Heart are numbred amongst the *Principal Parts*, because they elaborate the Blood for the advantage of the whole Body; why is not the Tongue accounted amongst them? which is not only an Instrument of Speech by which we are distinguished from Beasts, but also of Taste, by whose assistance we chuse those Aliments which are best, which if wanting, how the Heart and Liver could supply the Body with good Nutriment, I see not? The Brain governs all, but how I beseech you? If the Intestines did not perform their Office aright, what would it effect? if, like an Oyster, we should want Eyes and Ears? How despised are the Feet, and Hands, yet how in many conditions do they serve? For those not stirring, both  
Chili-

Chilification would be impaired, and the Blood and the Spirits rendred thicker, and the Brain made unfit for all Actions: In how short a time would the *Lympha* of our Body be corrupted, if not, besides its own motion, it was not also moved with the whole Body? All things in our Body are joyned together, as in a Clock, one cannot be without the other, neither is the most despicable Wheel less necessary than the Hand of the Clock it self, without which it cannot be accounted a Clock.

2. Into *similar* Parts, and *dissimilar*: A *similar*, whose single parts be of the same Nature with the whole.

*Dissimilar* are made up of more or less similars, as the Hand, Fingers, Feet.

There are *ten Similars* found in the Body; a Bone, Cartilage, Ligament, Membrane, Fibre, Nerve, Vein, Artery, Flesh, Skin; the eight former are made of Seed, Flesh, of Blood alone, the Skin of both.

This Division is subject to greater Difficulties than the former, but seeing it is not convenient to reject it, without the greatest confusion in the practice of Physick, let us consider the thing it self, committing the Disputes concerning the name, to the Schools.

#### *Chyrurgical Consideration.*

1. A *Principal part* being wounded, renders the whole Cure dangerous, therefore *Prognosticks* are not to be given here, but limited, lest the sudden alteration be rather ascribed to thee, than to the Disease.

2. Wounds of the *simple Parts*, are less dangerous

gerous than of the *Compounded*, yea, oftentimes they are sooner Cured by simple Medicines, than by Compound; the consent of the Parts, by reason of the Vital and Animal Spirits is so great, that scarce a joint of the Finger being hurt, can be Cured, without regard had to the whole Body. Indeed by the assistance of the Ligaments, Tendons, Membrains, &c. the Parts are so straightly knit together, and so abound with Sanguinary Vessels, that oftentimes upon the slightest hurt, the greatest Symptoms ensue, if you order not every thing aright.

## C H A P. III.

*Of Bones.*

**A** Bone is a Similer Part, cold and dry, composed of Seed, that it might afford strength to the Body, and help its motion.

Naturally, 1. It is hard. 2. Covered with a Membrane. 3. White, with some Redness. 4. Hollow, or Spungy. 5. About the Extremities covered with a Cartilage. 6. Smooth. 7. Moistened with a fat Humour.

It is *nourished* by Blood brought from the Arteries (every where so small, excepting the lower Jaw, that Writers of great esteem have denied them to the Bones) but especially contained in the Marrow.

This *Marrow* is invested with a Membrane, it self is altogether insensible; in the Cavities of great Bones, 'tis White mixt with Red, in the lesser White, in the Spungy Bones, soft and juicy.

Its



Its *Sense* it borrows from the Covering *Tunicle*; for the most curious observer never saw *Nerves*.

The Bones are *joyued together*, partly for the greater firmness, partly for the better Motion.

That *Conjunction* which is for their firmness, is called *Symphysis*, and is six fold.

1. *Suture*, as in the Bones of the Skull.
2. *Harmony*, which is by a right, or oblique Line, as in the upper Jaw.
3. *Gomphosis*, as the Teeth in the Jaws.
4. *Sincondroffis*, which is by an interposing Cartilage, as in the *Os Pubis*, or the *Sternum*.
5. *Synsacroffis*, which is by the assistance of a Ligament, as the Thigh Bone with the Hips.
6. *Syffarcoffis*, which is by the accession of flesh, as in the *Os Hyoidis*.

That *Conjunction* which is for Motion, is call'd *Articulation*, and is twofold.

1. *Diartrosis*, to wit, a loose Articulation: And
- 2, *Synartrosis*, to wit a straighter Articulation.

And both is performed by three manner of ways. 1. *Enarthrosis*, when the Cavity receiving the Bone is great, and the process of the Bone to be received also great, as in the joyning of the Thigh-bone with the Hips.

2. *Artrodia*, when the Cavity is superficial, and the Process little, as in the hinder-part of the Head, with the first Vertebra of the Neck.

3. *Ginglymus*, when one Bone takes into its Cavity the Process of another, and contrarywise the other Bone receives into its Cavity the Process of the former: As the Bone of the Thigh with the *Tibia*, and the Shoulder-Bone, the *Ulna*.

The number of Bones is greater in Children + than in adult People, for by years, many of them so grow together, as that they cannot be separated any more; also their number is much lessen'd, when consideration of the Processes, and small Bones is not had; from hence it is that some reckon 360, some 304, others 249.

The use of the Bones, is, 1. To be a stay to the Body. 2. Together with the flesh to give it its shape. 3. To help Motion. 4. To defend several Parts.

Although the Bones ought to be described in particular by us in their proper places, yet an Anatomist cannot be perfect, that is ignorant of the Bones: therefore, before we begin the Examination of other Parts, we think it convenient to exhibit to you the *Skeleton* in this place.

The Bones of the *Head*, we divide into the *Skull* and *Jaws*.

The *Skull* consists of eight Bones, which are  
1. The Bone of the Forehead. 2, & 3. Bones of the fore-part of the Head. 4, & 5. Bones of the Temples.  
6. The Bones of the hinder-part of the Head. 7. Os Sphenoides. 8. Os Ethmoides.

The upper Jaw consists of eleven Bones, to wit, five of each side, and one common, of these,

1. 2. Os Zygomaticum. 3. 4. Os Lacrymale. 5. 6. Os Maxillare. 7. 8. Bones of the Nose. 9. 10. Bones of the Palate. 11. Vomer.

The under-Jaw hath only one Bone; except the Cavity for the Teeth, of which are numbered, 32.

Four fore-Teeth. Two Dogs, or Eye-Teeth. All the rest are Grinders.

In the Internal Parts of the Ear, are four Bones, which

which are call'd, 1. *The Hammer.* 2. *The Anvil.* 3. *The Stirrup.* 4. *The round Bone.*

The Mouth hath only one Bone, called *Os Hyoidis.*

The Neck is composed of seven Vertebra's, of these, 1. Is call'd *Atlas.* 2. *Epistropheus.* 3. *Axis.* The rest want names.

The Bones of the Breast are in the upper part.

The two *Collar-Bones*, on the sides, fourteen *true Ribs*, ten *Bastard*, in all 24. On the fore-part the *Sternum*, with the *Swordlike Cartilage.*

In the upper part of the Back are two *Shoulder-blades*: in the middle twelve Vertebra's.

The hinder-part of the *Abdomen* exhibits five Vertebra's of the Loins, to which are joyned the *Os Sacrum*; as to this is joyned *Os coccygis.*

On the side of *Os sacri*, there is the *Os innominatum*, or Bone of the *Hip*, which is divided, 1. Into *Os Ilium*, which is the greatest. 2. *Os Ischium*, the lowest. 3. *Os Pubis*, in the forepart.

The *Arm* consists of only one Bone, which is call'd the *Shoulder-Bone.*

The *Cubiti* of two, the uppermost of which is the *Ulna*, the lowest the *Radius.*

The *Metacarpus* contains eight Bones, to which as yet there are no names given, the *Carpus* four.

The *Fingers* 15, each of which consisting of three Joynts.

Besides these, about the Joynts of the *Fingers*, are found the *Offa Sesamoidea*, 10, 12, 15, or 20.

Only one Bone of the *Thigh.*

The *Leg* consists of two, one of which is the innermost, called *Tibia*, the other, which is outermost, the *Fibula.*

Between

Between *these*, and the Bone of the Thigh, is placed forwards, the Knee-Bone.

The *Tarsus* hath seven Bones, which are, 1. *Tarsus*, or, *Astragalus*. 2. *Calx*, or the Heel-Bone. 3. *Os Naviculare*, or *Cimiforme*. 4. *Os Cuboides*, or *Tes-*  
*ta*. 5. 6. 7. *Ossa Cuneiformia*, or *Sphænoïdea*.

The *Metatarsus* hath five Bones.

The Bones of the *Toes* are 14. for there's only two in the great Toe.

The *Ossa Sesamoidea* are found here also, 10, 12. sometimes 15, or 20.

### *Chirurgical Consideration.*

The Bones are subject to many Diseases. *Fra-*  
*ctures*, and *Dislocations*, which are already Dis-  
 coursed off, as also *Putrifaction*: And seeing *they*  
 may be several ways produced, we will declare  
 those which are chiefly worth our considera-  
 tion.

Preternatural Humors, by what cause soever,  
 either General or Particular, penetrating the  
 Bone, sometimes produce an *Ulcerous Excre-*  
*scency with moistness of the Bone*; sometimes a *Can-*  
*cer of the Bone*, to wit, *Spina Ventosa*, effects ne-  
 cessary to be distinguished; which because no  
 Physician hath made it his business to describe; I  
 will impart that which Reason and Experience  
 hath taught us.

The cause of an *Ulcerous Excrescency in the Hu-*  
*midity of the Bone* ( which effect, is call'd by the  
*Dutch, een Beensuyger* ) is preternatural Phlegm,  
 depriving the Bone of its temper and hardness;  
 the flesh cannot be said from this soft foundation  
 to keep also its Natural state: But its nourish-

ment passeth into soft spongy flesh, which by degrees increaseth, and at length causeth an Ulcer from whence the Tendons, Ligaments, and Nerves are corrupted, and the whole Member subject to danger.

In this Case you must not flatter your self, that Medicines can effect any thing, before you come to the bottom, that is, the Bone it self: And the Bone being made sound, the Ulcer will be cured, and the flesh return unto its natural constitution. It is therefore necessary to make Incision, even down to the Bone it self, and if there be a great Excerescency, *extirpate it*; and if it be observed to rise again, apply an *actual Caustery*, always consideration being had of the Bone.

- *Remedies proper* against Putrifaction of the Bones are already, both by us, and others, sufficiently described. To take away the Excerescency of the flesh, Oyl of Vitriol, Oyl of Antimony, Spirit of Vitriol, *Ung. Ægyptiacum*, *Fuscum* or *Felix Wurtz*, are very good; and this Powder is Excellent.

Take the Restaurative Powder, an ounce; white Vitriol, a dram; prepared Arsnick, two drams. Mix them.

Sprinkle it upon the proud flesh, laying over it a drying Plaister, and it will make a thick Escar, without great pain, which may be taken off the next day.

- 2. The Cause of a Cancer of the Bone, (by the Dutch named *een Beenvreeter*) is a sharp Humor, first Corroding the Bone, then making its way through the *Periostium*; then follows an Ulcer of the flesh, and skin, incurable, before the Bone be made sound; its Orifice is very little, the edges



are pale, the Matter that flows forth is thin, the flesh soft, and somewhat swel'd, at least, (as we have spoken in an *Ulcerous Excreescency*) increaseth of its own accord.

Here also is Incision necessary, made according to the length of the part, to the Bone it self; forthwith must be applyed those things that correct *Pu-  
rification*, to wit, *Euphorbium*, Spirit of Vitriol mixt with Spirit of Wine, &c.

I have not only once experienc'd the Powder of Turpentine hardned by boiling, to be of great vertue, mixt with *Ung. Fuscum* of *Felix Wurtz*, of *Egyptiacum*, an actual *Cantery* is very convenient: The Cure also will be accelerated, if instead of Tents made of Lint, you use Elder-pith, because this inhibes the sharp and thin Humors, by which the action of Nature is promoted.

Seeing that for the most part these Diseases arise from the distemperature of the whole Mass of Blood; and when one Cancer is almost cured, another appears in some other place; therefore 'tis highly necessary to have regard to the whole Body. For which purpose the following, or the like Medicines may be taken.

Take Roots of Comfrey the great, Osmund Royal, *China*, *Sarsaparella*, of each an ounce; Guaiacum-bark, two ounces; Rheubarb, six drams; Senna, ten drams; Agarick, six drams; Cloves, a dram; Cinamon, two drams: Infuse them 24 hours in a sufficient quantity of Barley-water, then boil them with a gentle fire, and to two quarts of the strained Liquor, add of Syrup of Comfrey of Fernel, four ounces: Make it into an Apozeme.

Let the Patient, of a middle age, take three, four,

or five ounces: it Purgeth gently, forwards the Cure, and preserves from further mischiefs.

3. The *Bones* also are subject to certain *Tubercles*, call'd *Tophi*, and *Nodes*. These for the most part are the Symptoms of the Pox. Here I shall only set down some External Medicines, approved by long Practice.

Take Oyl of Venice-Turpentine, of *Euphorbium*, of *Guaiacum* distill'd, of each two drams; *Crude Opium*, half a dram: Make it into a Liment.

Or,

Take Mastick, Male-Frankinsence, of each two drams; *Laudanum*, half an ounce; Quicksilver exting't in Turpentine, an ounce; Crude Antimony, three drams; *Crude Opium*, a dram; Venice-Turpentine, as much as sufficeth to make it into a Plaister.

Or,

Take the juice of Houtleek, Henbane, Celadine the greater, of each a dram, Mans-fat, three drams; Oyl of White-Lillies, Camomile, of each two drams: boil them to the consumption of the Juices, afterwards add of Mercury sublimat, a dram, and scruple; Venice-Sope, two drams; Crude Antimony, three drams; Mummy, *Opium*, of each a dram; *Laudanum* and Wax, as much as is sufficient to make it a Plaister according to Art.

4. Moreover it is to be observed, that no *Foam* or *Oily Medicines* are to be used to the Bone, except they are exstream drying, or that by Distillation have lost all their unctions.

## CHAP. IV.

*Of a Cartilage.*

**A** Cartilage is a similar, *Spermatick* part, dryer and harder than a *Ligament* but moister and softer than a *Bone*, rendring the *Articulation* the more plyable, and defending several Parts from external injuries.

*Difference.* ] Some are softer, especially about the Joints, others harder, and differing not much from the nature of a *Bone*.

'Tis nourished by little *Arteries*.

It is endowed neither with *Nerves*, nor *Membrane*, and by consequence without sense.

Its use is to facilitate Motion, and to defend some Parts from External injuries, whereupon it is scarce subject to any.

*Chyrurgical Consideration.*

Not seldom are the Cartilages, together with the Bones, both corrupted and cured; other particular Diseases it scarce hath any, besides too great a *hardness* or *softness*: Of both which we will give Examples.

1. The *Epiglottis* sometimes is so indurated, as that it not only deprives of Speech, but also hinders the Patient from swallowing, except a great piece; for Drink, and all other Liquid things pass into the Wind-pipe, as not being well closed by the stiff *Epiglottis*. This Disease is incurable,

2. *Glottis*, or Chink of the *Larinx*, either from Meat or Drink, or Medicine, is sometimes so straight wrung together, as the Patient cannot make any noise; this we remedy by the following Medicines; Purgings and Bleeding, if necessary, having gone before.

Take Milk, six ounces; Yolk of an Egg; White-Sugar, three drams: Mingle them: let the Patient take often a Spoonful or two.

Or,

Take Frankinsence, Mirrhe, of each a scruple; Eastern Saffron, half a scruple; Juice of Liquorish, a dram and an half; Gum Tragacanth, two drams; Sugar, as much as sufficeth to make them into Troches, always holding one of them in the Mouth, and swallowing them down.

I deem those Anatomists to have committed a great Error, who have ascribed this Malady to be an *Inflammation of the Larinx*; although I deny not, but that the Cartilages may be inflamed, and also corrupted; yet 'tis certain, that which they have set down, is not of the Cartilages, but of the Neighbouring Glandules, and of the fleshy parts of the Jaws; for it would not be so frequently cured, because an Inflammation and corruption of the *Larinx* I alway esteemed a mortal Disease.

2. The *Swordlike Cartilage of the Breast* is oftner than Practitioners take notice of, unnaturally bent inward, being more relaxt than its Humors flowing in too great quantity; and so inclining with the point inward, preffeth the Stomach, from whence comes a diminution of the Appetite, and a Vomiting of what is taken in, with

with a continual pain of the Stomach, and a wasting of the whole Body; easie for an Anatomist by the touch to apprehend this Malady, and in the space of few hours to Cure it, for otherwise Men are miserably troubled for many years.

'Tis corrected by a large mouthed Cup, if outwardly applyed upon the depressed Cartilage, and being there fixt, let it remain, till breathing is hindered, then suddenly remove, and the Cartilage oftentimes at the first time, returning again into its natural place; which if it appears not to do, the Chirurgion must repeat this operation once or twice; then having embrocated the Part with Oyl of Roses, and Mertles, apply this Plaster to the Part, which must remain there several days.

Take Bistort-Roots, Cypress-Nuts, of each a dram; Mastick, Frankinsence, of each half a dram; Balauftians, a scruple; Oyl of Nutmegs Express, one dram and an half; Naval Pitch, and Turpentine, of each enough to make it into a Plaister.

## CHAP. V.

### Of Ligaments.

**A** Ligament is a Similar, Spermatick, dry part, destined to the connecting of the Parts, especially the Bones.

Difference. ] Some are broad and Membranous, some round and Nervous: 'Tis here to be observed,



ved, that the names of *Membranes*, and *Nerves*, are much used both by Writers, and Practitioners, and hath deceived many: But 'tis convenient to know that here, it hath regard only to their External Shape, not their Internal Essence; for the Ligaments, both the Membranous, and the Nervous are void of Sense, which they would not be, if they were composed of the true substance of Nerve or Membrane.

There is none *hollow*, if you except the Ligaments of the *Womb*; and are all destitute likewise of *Sense* of *Motion*, as from themselves.

*Use* is to connect the parts of the Body, especially the Bones, and preserveth them from continual Luxation.

*Chirurgical Consideration.*

1. Legaments suffering a solution of continuity, by reason of their unsensibleness, seldome draw other parts into consent, and by the use of very drying Medicines, are easily reduced to their natural state: I cannot but again in this place (found true by experience) commend the *Restorative Powder*, of whom this is the Description.

Take Roots of Comfrey the greater, Aloes Succotrine, *Calcis viva*, of each two ounces; Mastick, Mirrhe, Mummy, of each two drams; Precipitate, two ounces: Make it into a Powder.

Here diligently at the first time is the weak heat of the Ligaments to be considered, seeing it may give occasion to a copious Collection of Humors, and other grievous Symptoms.

2. The Ligaments also are not seldom Relaxed: Yea although the ignorant do contradict some-

sometimes they are so much extended that they may give way to a Luxation, which the Sciatick pain hath more then once given us Example of: in such a Case, External Bleeding, and Purging profit much; outwardly the Application of Corroborating and Discussing Topicks: The following Plaister is Excellent.

Take Stiptick Plaister of *Crolius*, an ounce; Oyl of Earth, of Tyles, of each a dram: Make it into a Plaister to be spread upon Leather.

## CH A P. VI.

### Of Membranes.

**A** Membrane is a Similar, Spermatick Part, broad, soft, dilatable, white, investing the parts, and carrying sense to them.

Difference. ] Some are very thin, others thick; some fleshy, others not.

The Parts which invests are properly call'd Membranes, those which contain the Humours, Tunicles; and those which cover the Brain, *Meninges*.

It is endued with sense from it self, for all Membranes are sensible, yea, the Nerves themselves owe their sense to the Membranous substance of them.

Membranes therefore only are the true Organs of feeling, they serving the Animal Spirits to this purpose.

Use is, 1. To invest the Parts of the Body.  
2. To defend it from injuries. 3. To keep them united.

united. 4. To strengthen them. 5. to give them sense. 6. To close the Mouth of the Vessels, that the Nutrious blood be not carried too suddainly into the part, or out of it, into the Vein it self. 7. To separate the Parts.

### *Chirurgical Consideration.*

The *Membranes* being so very *sensible*, they cannot bear sharp Medicines; they are not endowed with great quantity of Blood, whence when they suffer a Solution of continuity, they are not easily united again. But I have observed oftentimes that by the Muscles, and the assistance of the *Quintour*, they are joyned together, as in the Bladder it self, whose Wounds and Ulcers otherwise are esteemed incurable.

## C H A P. VII.

### *Of Fibres.*

**A** Fibre is a Similar, *Spermatick Part*, dispersed through the skin, flesh, and *Membranes*, to make them the stronger, and being naturally distended, to contract again into the same manner.

Differences are *right, oblique, and transverse*; and some *round*; the *right* attract, the *oblique* thrust forth, *transverse* retain, *round* constrain: But this they do not, so by their own singular vertue, as by the common vertue of the Member which they serve, and from whom have their sense, and nourishment, for of themselves they are senseless.

*Use*, is to strengthen the *Membranes*, *Skin*,  
and

and Muscles, and when dilated, to reduce them into their natural state.

Whether the *Blood* it self hath *Fibres*, as many have delivered, and as it seems very probable to us, shall be explained in another place.

*Chirurgical Consideration.*

These offer nothing worthy consideration, except that, when they are wounded, the consolidation of the *Flesh* and *Skin* is the longer, and there is a greater stiffness of the *Muscles* about the place, and makes them difficulter to contract and extend. The ductus of the *Fibres* is diligently to be observed by them which are to make any curious Incision.

## CHAP. VIII.

### *Of Veins.*

**A** *Vein* is a *Similar*; *Spermatick*, *Membranous*, long, hollow Part, every where joyned per *Anastomoses* to the *Arteries*, receiving the *Blood*, wanting further *Concoction* from them, and carrying to the *Heart* and *Liver*.

*Difference.* ] Veins of a fourfold condition are found in the Body.

1. *Vena Cava.* 2. *Vena Porta.* 3. *Vena Pulmonalis.* 4. *Vena Lactea.*

Of the last of which, a more convenient way will be offered to treat of in the following.

The *Vena Cava*, and *Porta*, take their beginning from the *Liver*. There are those which would have

have *that* come from the Heart, from a weak Argument taken from unborn Embrions. But where I find many branches inserted in the Liver, few or none in the Heart, yea I have observed, that it hath not entred into the Heart it self, but only to be joyned to its right Auricle: I rather imbrace the old Opinion, willingly granting those honors to the Liver, that I think belongs to it.

*That the Roots of the Vena Cava, and Porta, were united by mutual Inosculations*, the Old Anatomists perswaded themselves; but the curious Inquisition of the Moderns hath both found out, and clearly demonstrated, to be joyned together, but not so united, that the Blood in those places, can pass out of one into the other; for the extremities of the foresaid Vessels, by means of the parenchyma of the Liver do so mutually consent, that Milk, or any liquid thing cast into the *Vena Porta*, with a Syringe, finds an easie passage into the *Vena Cava*, without either any injury of the Veins, or the Parenchyma.

Veins have only one *Tunicle*, with many *Valves* within, especially in the Joynts.

They are *nourished* with Blood from the *little Arteries*, not that contained within themselves.

They are endowed with *feeling*, both from themselves, and from the *Nerves*.

*Use*, is to receive the Blood not sufficiently elaborated from the Arteries, and return it to the Heart, and Liver, there to be more perfectly concocted.

For the better *Methods* sake in the following, we must be forc'd to describe all Veins here particularly, and divide them into their branches.

^ *Vena Cava* taking its beginning in the Liver,



er, is separated into the *ascending Trunk*, and *descending*.

The *Ascending*, which is the greater, perforates the *Diaphragm*, and is divided into four Branches: of these,

1. *Phrenica*, which disperſeth it ſelf through the *Diaphragma* and *Pericardium*.

2. *Coronaria*, appropriated to the *Basis* of the *Heart*, proceed from the *Trunk* it ſelf, after it hath penetrated the *Pericardium*, and inwardly united it ſelf by a large fleſhy Oriſce to the right *Auricle* of the *Heart*..

3. *Azygos*, or *ſine pari*, coming from the right ſide of the ſame *Trunk*, when *ascending*, it hath paſſed the upper part of the *Pericardium*, affording chief branches to the eight lower *Ribs*, then about the fleſhy appendices of the *Diaphragm*, it enters the *Cavity* of the lower *Belly*, where, on the left ſide, 'tis inſerted into the *Emulgent Vein*, on the right into the *Trunk* of the *Cava*.

4. *Subclavia*, from whom come forth ſeveral branches which go both upward and downward: The *Superiours* are,

1. *Muscula Superior*.

2. *Jugularis*, *externa*, & *interna*; that on both ſides ( ſometimes ſingle, ſometimes double ) goes to the *Neck*, *Head*, and *Face*; this to the thick *Meninx* of the *Brain*, to whoſe third *Sinus* its greater branch is united.

The *Inferiours* are,

1. *Intercostal*, ſerving the four upper *Ribs*, and their *intercoſtal Muſcles*.

2. *Mammaria*, which is carried to the *Breaſts*.

3. *Medaſtina*, which goes to the *Medaſtine*, and *Thime*.

4. *Cervi-*

4. *Cervicalis*, which goes to the Neck.
5. *Muscula inferior*, which goes to the Muscles of the Neck.

6, 7. *Thoracica, inferior, and superior*, which goes to the Muscles of Breast.

The Subclavials being come out of the Breast, are call'd *Axillares*, then go to the Arms, where they are divided into 3 great branches, which are,

1. *Cephalica*, in the Hand, between the little Finger and its next, 'tis named *Salvatella*: Its branches are variously mixt with the branches of the Median.

2. *Basilica*, or Liver-Vein.

3. *Mediana*, which proceeds with others branches from the *Basilica*.

The descending Trunk which is the lesser, and is undivided till it comes to the fourth Vertebra of the Loins, then it communicates,

1. *Adipsofa*, to the Membranes of the Kidneys.
2. *Emulgens*, to the Kidneyes themselves.
3. *Spermatica*, to the Testicles.
4. *Lumbares*, two, three, or four to the Loins, and to their Vertebraes.

Nearer to the *Os Sacrum*, it is separated into two branches, call'd *Illiaci*. Before they go to the Feet, the Trunk it self presents,

1. *Muscula Superior*, which goes to the Muscles of the Loins, and *Paritoneum*.

2. *Sacra*, sometimes single, sometimes double, to the *Os sacrum*.

3. *Muscula media*, to the Buttocks.

4. *Hippogastrica*, to the Bladder, and its Neck, to the Sphincter Ani to the *Pinis*, and to the neck of the Womb.

5. *Epigastrica*, to the Muscles of the *Abdomen*, and to the *Paritoneum*.

6. *Fudex*

6. *Pubrunda*, to the privy Parts.

7. *Muscula inferior*, to the joynt of the Hips.

The Iliack branches, as soon as they have left the Cavity of the Belly, are call'd *Crunales*.

From these proceed,

1. *Ischiatica minor*, which goes to the Skin, and Muscles of the Hip.

2. *Ischiatica major*, to the Hip, then to all the Toes.

3. *Proplitea*, to the Ham.

4. *Suralis*, to the Muscles of the Calf of the Legg.

5. *Saphena*, to the Knee, Ankle, and to the upper part of the Foot, and to the great Toe.

The *Vena Cava*, where it comes out of the Heart, receives three *Valves*, called *tricuspidales*, looking Internally, for this purpose, that the Blood may freely enter into the Heart, but not return.

The Use of the *Vena Cava*, is to receive the Cruder Blood from the Arteries, and restore it to the Heart.

*Vena Porta*, much lesser & looser than the *Vena cava*, ariseth from the umbilical Vein, and with many Roots is inserted into the Liver: without it, it is divided into the Trunk, and branches, all which are distributed into several parts contained in the lower belly.

From the Trunk proceeds,

1. *Gastroepiplois*, which goes to the Caul, and Stomach.

2. *Intestinalis*, to the intestine *Duodenum*.

3. *Cystica gemella*, to the Gall.

4. *Gastrica minor*, to the left side of the Stomach.

Q

Then,

Then this Trunk is divided into two great branches, the Splenick, and Mesenterick.

1. *Ramus Splenicus*, sometimes joyning to the Sweetbread, sometimes passing through it, divides into four little branches, as soon as it hath left it's which are these,

1. *Vena gastrica major*, which goes to the Spleen, communicating from thence three or 4 small Veins to the Stomach: These being blown up in living and dead bodies, manifestly declare, nothing at all can enter into the Cavity of the stomach, and so by consequence no Humor coming from the Spleen; as long since Learned Men have Imagined, Taught, and Writ, seeing they terminate in the Coils of the Stomach, and open not into the Cavity it self.

2. *Epiploica dextra*. 3. *Coronaria stomachi*.  
4. *Epiploica sinistra*.

*Mesentericus ramus* is also divided into four others, of these the

1. Retains its old name, and is distributed with fourteen or more branches through the Mesentery.

2. *Vena Hemorrhoidalis*, and goes to the Spleen, the Womb, and the right intestine.

3. *Vena caecalis*, to the blind Intestine.

4. *Ramus mesocolicus*, and goes to the intestine call'd Colon.

The Use of the *Vena porta*, is to take the Blood, not sufficiently elaborated, from the Arteries, and carry it to the Liver, for the perfecter concoction, and for the separation of the Choler.

*Vena pulmonalis* (which the Antients corruptly call'd, *Arteria venosa*, seeing that it hath but only one Tunicle, beats not of it self, and returns the Blood)

Blood ) coming out of the left Ventricle of the Heart, with a wide Orifice goes to the Lungs to receive the more imperfect Blood from the Pulmoniack Artery, and carries it to the Heart.

About its egress from the Heart, it hath *two Miterlike valves*, hindering the regress of the Blood to the Lungs.

Its Use, is to carry the Blood received from the Pulmoniack Artery, into the left Ventricle of the Heart.

### *Chirurgical Consideration.*

1. We have in another place treated of *the Wounds of Veins*; we shall only add, that if the bandage, by which you stay the bleeding, be bound too hard, it will easily induce a Gangrene.

2. We have admitted only four general *Indications of Bleeding*, to wit, for the *Refrigeration, Imminution, Revulsion, & Derivation of the Blood*, but special Diseases requiring one Vein to be chosen before the other, are these following, in a *Delirium*, & great pain of the Head, the Vein of the Forehead or *Præparina*, or *Vena puppis*, may be Cut; Sometimes the *Temporal*, or *Saphena*.

In an Inflammation of the Eyes, the *Cephalica*, and if you desire to evacuate from the whole body, the *Basilica*, or *Mediana*.

In a *Quinsy*, the *Ranina*, which must be cut with a little Incision, seeing we cannot scarce by any means stop the Flux of Blood, and sometimes also the *External Jugular*.

In a *Plurisie*, the *Basilica* of the affected, not opposite side; here is requisite the greatest Circumspection, for under it lies the Tendon of the Muscle Biceps, and near it the Artery.



In anger, fear, or any Casualty, &c. the *Mediana* or *Basilica*.

In Chronick Diseases, and quartane Fevers, the *Salvatella*, especially in the Full or New Moon.

In Women in Child-bed, and in suppression of the Menfes, the *Saphena*; In the *Sciatica*, the *Ischiastica*.

## CHAP. IX.

### Of Arteryes.

**A**N Artery is a Similar, Spermatick, Membranous, slender, carious Part, joyned every where to the Veins, by the assistance of its Oscultations, containing the Nutritious Blood with the Vital Spirit, carrying it to all the Parts of the Body.

Difference is two-fold, the great Artery, or *Aorta* and *Pulmonick*.

The great Artery comes from the left Ventricle of the Heart; which except in the Brain, and other softer Parts, every where else consists of a double Coat: The outermost of which is of the thickness of the Veins; but the inmost is five times thicker, lest by continual pulsation about the head, and solid Parts, it might incur an incurable Rupture.

It receives three Valves call'd *Sigmoides*, looking outwardly, coming out of the Ventricle of the Heart, with a great Orifice before it perforates the *Pericardium* it affords to the Heart it self the *Coronary Artery*; when past the *Pericardium*, it is divided

divided into the *Ascending* and *Descending Trunk*.

The *Ascending Trunk*, which is the lesser, resting upon the Wind-pipe, is separated into the two *Subclavials*, from which, being yet within the Breast, proceeds,

1. *Intercostalis superior*, proper to the four upper Ribs.

2. *Mammaria*, to the Breasts.

3. *Cervicalis*, to the Muscles of the Neck.

4. *Carotis externa*, & *interna*, proper to the Larynx, Tongue, Neck, Head, and Brain.

When they have left the Thorax, they are call'd *Axillares*, and carry nourishment to the outward part of the Breast,

1. 2. By the *Thoracica superior*, & *inferior*. 3. By the *Scapularis*. 4. By the *Humeraria*.

Then they approach the Arm, where they accompany, and lye under the branches of *Vena Cava*, and are call'd by the same name as they are.

The *Descending Trunk*, which is the greater, being yet within the Breast, sends

1. The *Intercostalis superior*, to the eight lower Ribs.

2. The *Phrenica*, to the Diaphragm and Pericardium.

Then having perforated the Diaphragm, it communicates.

1. The *Celiaca*, to the Stomach, from which proceeds the *Splenica* and *Gastro Epiploica dextra*.

2. 3. *Mesenterica superior* & *inferior*, to the Mesentery.

4. *Emulgens*, to the Kidneys.

5. *Spermatica*, to the Testicles.

6. *Lumbaris*, to the Loins. 7. *Muscula superior*, to the Muscles of the Abdomen.

Then at length it is divided into the two *Iliac* branches: about this division exhibiting,

1. *Muscula superior*. 2. *Epigastrica*. 3. *Hypogastrica*. 4. *Umbilicalis*. 5. *Pudenda*.

Out of the Abdomen they change their names, and are call'd *Crunales*, and so they descend into the Feet, all along accompanied with the Veins, from whom they borrow their names.

*Use*, is to carry the Nutritious Blood with the Vital Spirit into all parts.

*Arteria pulmonalis* ( which the Antient did falsely call *Vena Arteriosa*, seeing it hath pulsation, is made up of a double Coat, and contains the Nutritious Blood ) issuing out of the left Ventricle of the Heart, with a double branch enters the Lungs, and is distributed through them by many little branches, carrying to them the Nutritious Blood : And then what in the Blood is not sufficiently concocted into the Pulmoniack Vein, by whose means 'tis return'd into the left Ventricle of the Heart.

It hath three *Valves* called *Sigmoides*, which look outward, lest the Blood that having entered it, should slide back again into the Ventricle of the Heart.

Its *Use*, is to convey the Blood out of the right Ventricle of the Heart, into the Lungs, by the which they are nourished, and what remains above then, serves for their Nutrient, is brought back again by the Pulmoniack Vein into the left Ventricle of the Heart.

o Here it pleaseth the Curious Observers of Anatomy to take notice of (besides the eleven *Valves* which we have declared to be disposed in the four already named Vessels ) that many others

are

are found in the Heart, which as yet want any certain name.

### Chirurgical Consideration.

In a *Hemorrhage of the Nose*, the Blood flows from the Arteries, not Veins, which not only the colour of the Blood witnesseth, but also the great weakness which always follows such a Flux: Use to stay it after this manner,

First, Let a Vein be opened, then let there be applyed in Men, to the Testicles, in Women, to the *Hypogastrium*, a linnen cloth four double wet in cold Water; or let the face of the Patient be suddenly spinkled with cold Water: Internally let there be exhibited now and then a spoonfull of the following Mixture:

Take Plantane Water, two ounces and an half; Alexipharmick-Water, half an ounce; Cinamon-Water, three drams; Confection of Hyacinth, half a dram, Dragons-blood, *Lapis Hematis*, of each fifteen grains; Julep of Roses, an ounce; *Laudanum opiat*, two grains; Spirit of Vitriol, six drops: Mix them.

*The following Water is also commended.*

Take *Lapis Prunella*, half an ounce, Plantane Water, six ounces; let it be divided into three Doses.

The manner of opening *Arteries*, delivered by the Antients, is so dangerous, & frightful, as that there is none of the Moderns but what dislike it; yea Arteriotomy had been wholly rejected, had not the diligence of their Posterity found out other ways: That which I (with others) have

found always to be the best of them, I will here set down.

Chirurgions were wont to tye a Bandage about the Neck, but seeing when 'tis hard bound it is very troublesome, it is better that the Ligature be made under the Arm-pits, which must be so strait, that the Jugular Veins, and Carotide Arterie may appear both by swelling and touch; then let the Arteries be commpressed by the Thumb, a little below, where you intend to make the Incision, and being opened ( which must be done by a steady and strong hand ) take forth as much Blood as is sufficient : which done, strow Astringent Powder upon the Wound, then put over it a double Linnen Cloth with a Plate of Lead, then bind it up with a convenient Bandage, and within five or six days space it will be perfectly well.

In the Headach, Madnes, Epilepsie, great Inflammations of the Eyes or Ears, the Arteries of the Forehead, Temples, or those behind the Ears are opened, as also the *Arteria puppis*, all of them being branches of the external Carotide.

In the Inflammations of the Liver and Diaphragm, the Artery between the Thumb and forefinger is opened; in palpitations of the Heart, either *thor* or the *Saphena* is to be opened.

Other Arteries are not to be opened, except a Bone lies under them, for fear of an Aneurism.



# CHAP. X.

## Of Nerves.

**A** Nerve is a Similar, Spermatick, Membranous, long, white, hollow part, serving for the carriage of the Animal Spirits to the Parts for Sense and Motion.

The Nerves take their Original from the Brain, and are divided within the Skull into eight pares; without it, to wit, those that come out of the Spinal Marrow, into thirty pares; seven of which proceed from the Vertebraes of the Neck, twelve from the Vertebraes of the Back, five from the Vertebraes of the Loins, six from the *Os Sacrum*.

The eight pare, within the Skull proceeding from the Brain, are

1. *Smelling pare*, which adheres to the Mamillary Processes.

2. *Obtuck pare*, which is the greatest, and united in the middle.

3. *The pare that moves the Eyes.*

4. *The tasting pare.*

5. *The second tasting pare.*

6. *The bearing pare.*

7. *Par vagum*, which is vested with strong Membranes; it descends through the Orifices of the Bone of the hinder part of the Head to the Throat, afterwards sending branches to the Neck of the Larinx, to the Muscles of the Tongue, and *Os Hyoidis*; then is divided of each side into the

the External, and Internal branch.

*The right External Branch*, having sent some branches to the Muscles of the Breast, makes the *right recurrent Nerve*; this contributes to the Voice, as also to the feeling in the *Pleura*, the Coat of the Lungs, the *Pericardium*, and to the upper Orifice of the Stomach, seeing all those Parts obtain branches from it.

*The left External Branch*, constitutes the *left recurrent Nerve*, which goes to the same Parts, as we have declared the right doth; being brought to the said Orifice of the Stomach, it is joyned to the right recurrent, and so goes to the lower Orifice of the Stomach, and to the lower part of the Liver.

*The right Internal Branch* sends Branches to each intercostal Muscle, then having perforated the Diaphragm, furnisheth all the parts of the lower Belly with a Nerve, ending about the *Os Sacrum*.

*Of the left Internal Branch*, is the same distribution.

### 3. The Part moving the Tongue.

The Nerves have a *Cavity*, but so little, not to be distinguished by the sight, except in the Optick Nerves, and those of the *Pudendum*.

### Chirurgical Consideration.

The Cure of wounded Nerves, and Tendons, is so like, as it hath been more than once the occasion of confusion amongst the best Authors, therefore for the better distinction sake;

1. The frequent *contusion of the Nerves* by a *Fall* or *Blow*: the Skin having suffered a solution of continuity, there happens an Ulcer, and many

other Symptoms, from the Afflux of Humors. requires the *same Cure*, we have proposed in other place of Wounds of the Nerves.

But if the contused Nerve be not bared, which may be discerned from the greater and more continual pain, than is usual in a simple contusion of the flesh, the greatest care is, that the coagulated blood be as soon as possible resolved; for if it should suppurate, the Nerve easily would putrifie, therefore let there be applyed a Cloth dipt in one or other of the following Oyls, warm to the affected Part.

Oyl of Castor, Worms, Dill, Rue, Camomile, Rosemary.

Or, let this Fomentation be applyed very hot with Spunges.

Take our Orise Roots, two ounces; Leaves of Rosemary, Marjarome, Horse-Mint, of each a handfull; Boil them in White-Wine for a Fomentation.

Or, let the following Plaister be laid on:

Take Sowbread Roots in Powder, two drams; Species Diambre, one dram; Oyl of Castor, three drams; Turpentine, a dram; Plaister of Betony, an ounce; Virgins-Honey, as much as to make it according to Art into a Plaister.

Oyl of Lavender is excellent in this Case, if taken to the quantity of two drops, especially where Convulsions happen.

2. The Nerves are not seldom obstructed with a Pittuitious, and tough Humor, from whence a stupor of the part, and sometimes a stiffness of the part; these Symptomes I used to remove after the following manner, the whole Body if occasion, being first Purged.

Take

Take Gum *Caranna*, half an ounce; *Gallum*, an ounce; Oyl of *Euphorbium*, a dram and an half: Make it into a Plaitter.

Or,

Take Mans-Fat, Goose-fat, of each an ounce; Oyl of Earth, three drams: Make it into a Liniment.

Let the Part affected be anointed with it Morning and Evening, then lay on the Stiptick Plaster of *Crolius*, or of *Ladatum*, or Diaciton with Gums.

You will hasten the Cure, if you use *Internal Corroboratives*, which do wonderfully alter the Nerves; although these things properly belong to the Physician, yet I think it convenient to prescribe this Decoction of great Efficacy, of which, let the Patient take three or four ounces twice a day,

Take Roots of Peony, Seaholly, of each half an ounce; Orise, three drams; Leaves of Marjoram, Rosemary, of each an handful; Flowers of the Lime-Tree, Lavender, and Lilly of the Valley, of each a pugil; the lesser Cardamomes, three drams; Nutmegs a dram; Infuse them six hours in a sufficient quantity of Whitewine, afterwards boil them, and to a quart of the strained Liquor, add three ounces of Syrup of *Stæchas*: Mix them.

There often happens through a *Chronick Disease*, *Luxation* or *Fracture*, a *Contraction* of the Members, which is not to be ascribed to the Nerves, but Tendons. This is easily remedied by the use of Oyls, and Gintments that have the property of mollifying the indurated Tendons, especially if there

There be used a daily Extension, either by the Hands, Weights, or Instruments.

Take Oyl of Camomil, Olives, Foxes, of each half an ounce; Compounded Ointment of Marshmallows, an ounce; Capons-Grease, an ounce and an half: Make it into a Liniment.

## C H A P. XI.

*Of the Flesh.*

**T**He *Flesh* is a *Similar, Bloody, Soft, Thick part*, made together with the *Bones*, to yield a strengthening to the *Body*, and to cover the *Spermatick Parts*.  
*Difference.* *Flesh* is three-fold;

1. *Musculous.* 2. *Glandulous.* 3. *Viscerous.*

*Musculous flesh* is soft, red, and is properly call'd *flesh*, and for these many ages hath come under the name of *Muscles*.

But yet a *Muscle* is not a *Similar Part*, but compounded of many others, to wit, *Fibres*, *Tendons*, *Nerves*, a *Membrane*, *Veins*, *Arteries*, that it might be a fitter Instrument of voluntary motion, to which the *Fibres*, *Tendons*, and *Nerves* do chiefly contribute.

It hath a *Tendon* in its beginning, and end, sometimes round, sometimes broad, sometimes but one, sometimes double.

Its *end* is in that place where the *Tendons* are greater, and more.

Its *Head*, or beginning where the *Nerve* is inserted; the *middle*, where the *flesh* swells out.

*Use*, is to promote voluntary motion, which  
 is



is performed after a three-fold manner:

1. When the *Contraction of the Muscle* is so that the end comes to the beginning, and here the *Antagonist* is quiet.

2. When the *motion* is *Tonick*, so that being contracted, it remains for some time in the same condition.

3. When it relaxeth, so that it is restored into its former seat and quiet, by its *Antagonist*.

*The Glandulous flesh is white, thick, and spongy* formed of seed (from whence it cannot properly be call'd flesh) to this purpose ordained, 1. To prop up the Vessels. 2. To receive the superfluous Humidities, whence they are call'd the *Emunctories* of the noble Parts.

Some Anatomists make strange diversities of them, but it will appear to any one that diligently inquires into all the Glandules, that they differ not so much in Substance, as in their Use and Humor.

*The Viscerous flesh, or the Parenchymick is red, hard, convenient to prop the Vessels, and to serve for many particular and various Operations; this is the flesh of Lungs, Heart, Liver, Spleen, which shall be Treated of in their places.*

#### *Chirurgical Consideration.*

The Muscles are subject to many Diseases, very many of which are of so little consequence, as that they shall not be propounded here, some we have declared in another place; the following require consideration, oftentimes wonderfully exercising the patience and diligence of the Chirurgeon.

1. An *Atrophy* of the whole Body oftentimes comes

comes from an Internal Cause: But if of the External, Hand, Arm, Foot, for the most part from an external Cause. Thus a *Frausture*, *Luxation*, *Contusion Tumor*, too hard *Ligatures*, and the like, vehemently compressing the Veins, and Arteries, that it hinders the free passage of the Blood to the Parts, upon which happens an *Emaciation*: for where the Vessels are wholly divided or stoppt, so that the least quantity of Blood cannot be carried to the Parts, there follows not a wasting of the Part, but a *Mortification*: in this case the External Causes must be removed: And there is to be taken, that the Blood may again be carried to the Part: Here *chusing* the Part, and the use of *Nettles* (as many will) is good: The *Chymists* commend much *Adulcrum Plumosum*; All hot Oyls likewise are here good; and this Ointment is of Excellent Vertue, *Take* fresh tops of Savin, Juniper, Lovage, of each two handfuls; Camomil-Flowers, Juniper berries, of each two handfuls; Oyl of Bayes, White Lillies, of each twelve ounces; Hoggs-grease, three ounces; Doggs-grease, an ounce and half; *Aq. vita*, two ounces: Boil them together to the consumption of the moisture; then add to the express-Liquor, Oyl of Spike, three drams; Juniper, a dram; Mustardseed in Powder, half an ounce; Roots of Pellitory of Spain, Long Pepper Powdred, of each two drams; Yellow Wax, as much as is sufficient to make it into an Ointment.

Or,

Take *Pulvis Amianti*, three drams; Roots of Pellitory of Spain, a dram and half; Casior,

Castor, *Euphorbium*, Oyl of Earth, of each two drams; Gum *Ammoniackum*, an ounce and half *Ladanum*, and Wax, as much as sufficeth to make it into a Plaister.

2. The true reason of the Generation of Wens in my Opinion, is this: The mouthes of the Arteries appoiuted to carry nourishment to the Muscles, sometimes are more opened than they ought to be, whether it be by Fall, or Blow, or from an Internal Cause, especially in Plethorick people, and in Parts disorderly moved, the native heat converts the extravassated Blood into Flesh: But seeing the Member requires not so great a quantity of nourishment, it increaseth into a preternatural swelling; and if this Blood be impure, Choler produceth pain, Phlegm, Viscousness, Melancholy, a Cartilaginous hardness, and 'tis to be attributed to these Humours that this preternatural Flesh is more yellow, white, or livid.

'Tis seldom included in a proper Tunicle, except where Phlegme, is its greatest Cause, and then those Tumors are generally in the Neck: The Veins grow bigg according to the increase of the Tumor, so that under the skin they appear as thick as ones Thumb.

'Tis not in it self Malignant, yet by ill applications may be easily made so: Air is very hurtful, if the Tumor be exposed to it.

For the most part the best Remedies are here used to little purpose, on the contrary the Tumor more and more increasing. You cannot promise any Cure; except you take it away by a Thred, Knife, or both.

In the beginning, the *Medicines* that are to be applied, ought to be very *astringen* and *Repelling*; the part is gently to be rouled, having applied to it either a Plate of Lead, or a Dichalcitheos Plaister, of Frogs with Mercury, or the following;

Take Pomgranate-rinds, Biſtort-roots, of each one dram; Scales of Iron, Quickſilver, Burnt Lead, of each two drams; Bolearmenick, *Lapis Hematit*, of each a dram and half; Turpentine, Wax, as much as is ſufficient to make it into a Plaister according to Art.

In the mean time *Purging*, *Bleeding*, *Scarification*, and the *Application* of *Leeches* are not to be neglected. *Sweating*, alſo *Watchings* and *Abſtinence* profit very much.

But if the Tumor yields not to theſe Remedies, but daily increaſeth, *Suppuratives* are to be applied: but if theſe, within few dayes effect nothing, and the Tumor continuing in the ſame ſtate, an *actual Cantery* may be uſed, which let not the contrary Opinions either of Chirurgeons, or ſtanders-by hinder; for by its uſe, the increaſe of the Tumor will be ſtayed for a long time, yea ſometimes the Diſeaſe will be wholly eradicated.

But if the fleſh begins to repullulate again beyond expectation, the Surgeon ought not to deſert to endeavour either by a *Thred* or *Knife* its extirpation; the *Thred* being ſmall and ſtrong, muſt be twice wound about the neck of the Tumour, and tyed with a double Knot, which muſt be ſtraightned the ſame day, and ſo every day until the Tumor be deprived of its colour, feeling, and life, which is within 7 or 8 dayes, then 'tis to be taken off with a crooked Knife, which is very eaſie to perform, ſeeing neither any great  

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paint,

pain, or flux of Blood is to be feared; if the *Tumor* be wet in Mercurial or Arsenical-water, it hastens the mortification of this Tumour: But in this operation, a Phlegmatick Body is required, for in other Bodies pain and inflammation do so much afflict the Patient, that 'tis seldom that the *Tumor* in a short time should take them off, yet the Chirurgion may, to lessen the Symptoms, and to cool, anoint with a feather the part which the *Tumor* toucheth, with white Camphorated Ointment of Roses, or the like, continually putting the Patients in mind how that others bear it more quietly.

But if you design to use a *Knife* only, the whole Tumor must be endcavoured to be taken away, except you will consume the remaining by Medicines, which is very rarely effected; besides the Chirurgion must have care that he divides not the greater Vessels, lest there follows a Flux of Blood not to be stopped.

3. The *Viscerous flesh* belongs rather to the Physicians care, than the Chirurgions.

4. Of the *Glandulous flesh*, we have treated particularly in several places. In general 'tis to be noted, 1. That the *Glandules* are of a cold temperament, therefore require hot Medicines, but very ill suffers cold. 2. The *Tunicle* investing them, being eroded, or divided, the skin cannot be consolidated, before the whole Glandule, together with its Tunicle, be consumed with the Ulcer. 3. If *Corrosive* Medicines cure not the Ulcers of the *Glandules* within the space of few weeks, no hope remains of a sound Cure, because of the continual Flux of Humours: And this is the reason why we are for the most part compelled to take them away by Incision.



## CHAP. XII.

### *Of the Skin.*

**T**he Skin is a similar, spermatick part, having some Blood mixed with it, Reddish, White, Loose, resting the Body, and serving for feeling.

'Tis covered by a Sarfe-skin, for the greater defence, every where perforated with Pores, to give vent to the uselefs Fumes and Vapours; Endued likewise with manifest Perforations, as are the Mouth, Nostrils, Ears, &c. whose use is sufficiently known.

It hath Cutaneous Veins and Arteries, as also Nerves.

Its Use, is to cover the Body, as moreover it is the Instrument of feeling.

#### *Chirurgical Considerations.*

1. The skin being discoloured by the Jaundies, freckles, and other Spots, this Water renders again smooth and fair.

#### *Cosmetick Water of Minsicht.*

Take white Frankinsence, Sugar-Candy, of each two ounces; white Hermodactils, Florence Orise, Venice Borax, of each an ounce; Salt of Tartar, Burnt-Ivory, Camphire, of each half an ounce; Flowers of White-Lillies, of the white Water-Lillies, of the white seal'd Mallows, of each three handfuls; Virgins-Honey, three ounces; Goats-milk, two quarts; Bean-flower-water, and

• and white Rose-water, of each a pint and half white Lilly-water, and *Salomons-seal-water*, of each a pint; being mixt, let them be distill'd in *Balneo Mariæ*.

2. *Scars* remaining after the small Pox Wounds or Burns, we take away by the following Medicines, if deep and great, first, having us'd *Exedents*, then *Sarcotticks*.

Take Venice Borax, three Drams; Camphire a scruple; Oxes Gall, a dram; Oyl of Myrrhe two drams; Capons-grease, half an ounce. Make it into a Liniment.

Or,

Take Powder of the Roots of Snakeweed, of Orise, of each three drams; Seeds of Melon blanch'd, of Raddishes, of each a dram; Burnt-Egshells, half a dram; Common white Chalk, a dram and half; Fankinsence, a dram; Sugar-candy, three drams; Gum Tragaganth dissolv'd in Rose-water, an ounce; Goose-grease, as much as sufficeth to make it into a Liniment.

3. *Scabs* blemishing the Skin, are sometimes moist, dry, spreading, eating, crusty, malignant; this difference is of so small consideration, that generals being well known, 'tis not difficult, to one that well weighs every thing, to proceed aright in particulars.

Seeing the Cause of this Disease is a sharp, cholerick, ferous salt Humour, mixt sometimes with Phlegm, the often use of Purging, Sweating, and Vomiting, of Bleeding, Scarification, Leeches, Natural and Artificial Baths, as also of cooling, drying Medicines, and those that temper the acrimony of the Blood, Lotions, and Unctions are here very pro-

profitable; An Example of each I here give.

*A Purging Decoction.*

Take Roots of Sparagus, Grass, Polypody, of each six drams; Liquorice, three drams; Leaves of Fumitory, Succory, of each an handful; Senna, an ounce and half; Rhubarb, half an ounce; Tamarinds, an ounce; Aniseeds, two drams; Cream of Tartar, three drams; let them infuse 24 hours in a sufficient quantity of Whey, then boil them, and to a pint and half of the strained Liquor, add Syrup *Dianicum*, three ounces: Make it into an Apozeme. Dose three ounces.

*A Vomit.*

Take *Oxyacch. vomitivorum*, Syrup of Rosesolutive with Senna, of each an ounce; Fumitory-water, as much as sufficient; make it a draught.

*A Sudorifick.*

Take flower of Brimstone, Antimony Diaphoretick, Salt of Holy-Thistle, *Sal Prunella*, of each a dram; Make it into a Powder, to be divided into six equal Doses.

*A Bath.*

Take Roots of red Docks, Briony, of each six ounces; Leaves of Fumitory, six-handfuls; Camomile-flowers, three handfuls; Bran, a pound; Brimstone, two ounces; Nitre, an ounce; Alom, an ounce and half; common-Salt, two ounces: Mix them.

In a grievous and rebellious Scab, the Powder  
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of *Snakes* is excellent; this is the preparation of it: Take a Snake (in *March*, if possible, before it hath laid its Eggs) the Head and Tail being cut off, and the Skin stript off, all the inward Bowels (except Tongue, Heart, and Liver) thrown away; let it dry in an Oven moderately warm to a Powder: The Dose from four grains to sixteen,

*Vipers* dried after the same manner excell *Snakes*, and are commended in the Leprosy itself.

#### A Fomentation.

Take burnt-Talk, an ounce and half; quick-Lime, two ounces; Litharge of Gold, half an ounce; Bolearmenack, an ounce; dry Tobacco-leaves, three ounces; White-wine, a pint; clear Water, a quart: Let them boil a little, and keep the strained Liquor for use.

#### A Liniment.

Take Crude Brimstone, two drams; Venice-Sope, a dram and half; prepared Nitre, half a dram; Litharge of Gold, Two drams; *Mercurius dulcis*, a dram and an half; White Camphorated Oyntment, an ounce; Oyl of *Rhodium* eight drops: Make it into an Oyntment.

## CHAP. XIII.

*Of the Fat, Nails, and Hair.*

It hath been long disputed, whether the Fat, Hair, and Nails ought to be accounted the parts of the Body, or Excrements. I neither think them Excrements, nor Parts properly so call'd.

Not Excrements, for they are Bodies, enjoying with the rest Life and Nourishment, but not nourishing others, and are of singular use for the publick good.

They are not Parts properly so call'd, they are destitute of any certain bounds, and have no particular operation: Fat nourisheth in famine; the Hair, and Nails injurious to the whole, may be cut off.

*Adeps, or Fat, is a similar Body, soft, white, insensible part, made to preserve the natural heat, to help Chylification, to facilitate Motion, to moisten the Parts, and to nourish the Body in Famine.*

*Hair is a similar part, produced by the worst part of the Blood, covering some Parts, and in some manner adorning them.*

'Tis outwardly foursquare, inwardly hollow, the variety of colour it owes, to the temperament, and age of Men, to the constitution of the Air, or Countrey.

*The Nail is a similar part, sprung also from the impurest part of the Blood, flexible, hard, defending the Fingers from external injuries, as also adorning them; Its Root is joyned to a Ligament*



ment, and is very sensible by reason of the neighbouring Tendons.

*Chirurgical Consideration.*

1. Blood wholly, or in part destitute of Fat, is not much to be commended, for its abundance constitutes fleshy, its unctiousness fat Bodies, where but little fat, lean; this fatness of the Blood dispersed into the parts of the Body, changeth into natural fat more copiously in the cold parts; to wit, in the lower Belly, Breast, &c. than in the hot. These Signs may confirm our Opinion, as often as they are required from the Blood after the opening of a Vein; for the upper part of the Blood, which is erroneously taken by many to be the Phlegm of the Blood, and so the vitious part, oftentimes is the very best of it: This may be distinguished by the fire; for, if it be fat, it will flame; if Phlegm, it useth to crackle; hence it comes to pass that the Fat, when it is any obstruction in the cure of an external Disease, may be cut off without any pain, or other inconvenience.

2. The Nails are oftentimes subject to cleave, to be rough, and of ill colour; the Cause, is a vitious Humour, or some External accident; these may be cured by the often pairing of the superfluities, and the applying the following Plaster.

Take Rosin, half an ounce; Turpentine, Frankincense, Mastick, of each two drams; Goats Suet, Green-Wax, of each five drams: Make it into a Plaster according to Art.

Blood sometimes remains coagulated under the Nails, which may be dissolved by this Plaster.

Take Roots of Crowfoot, of Solomons Seal, red Mirrhe,

Mirrhe, of each a dram; Gum *Sagapenum*, an ounce; Oyl of Nuts, a dram: make it into a Plaister.

For the falling off of the Nails, a Finger-stall may be prepared of green-Wax, *Ladanum*, and *Ammoniacum*, &c.

3. The shedding of the Hair, is a frequent evil, the causes of it, are burning Fevers, old Head-aches, the Leprosie, and the French-Pox; and there is not to be expected any new in its room, before the Cause for sometime hath been taken away, which being done, the following External applications may be made use of.

Take Southernwood, Maiden-hair, Mallows, Marjaron, of each one handful; Cummin, roots of Parsley, of Raddishes, Storax Calamit, and liquid, Red Mirrhe, of each five drams; *Euphorbium*, *Cantharides*, of each a dram; Gum *Ladanum*, three ounces; Oyl of White-Lillies, an ounce; Roman Nettle-seeds, half an ounce: infuse them 36 hours in three quarts of fair Water, then distill them in *Balneo Marie*.

Or,

Take Aloes, a dram; Agarick, Coloquintida, of each 2 drams; Rockel-seeds, half an ounce; Salt of Camomile, two Scruples: infuse them twenty four hours in fifteen ounces of White-Wine, and keep the strained Liquor for your use.

CHAP.

## C H A P. XIV.

*Of the Generation of the Blood, and its Circulation.*

**W**E have hitherto treated of the Similar Parts, properly, and improperly so call'd, from whom are the Dissimilars compounded. The Blood serves to their Conservation, as doth the Spirits to the Actions, from thence proceeding; but how the Blood is generated in our Body, and how many Spirits are there found, is not as yet sufficiently understood by us. In this thing Writers differ among themselves, so that the very Truth seems to lye hid in the profoundest darkness; yet the love and desire of searching out the truth exactly, gives me freedom to declare my Opinion, yet still giving place to a better.

*Sanguification* I conceive to be performed after this manner: The harder Meat received in by the Mouth, chewed by the Teeth, and by the *Spittle* moistened, is in some manner prepared to be made chile.

This *Spittle*, from whence it hath its beginning, no man as I know of, hath rightly demonstrated those that derived it from the Veins and Arteries, it is upon this reason, because they communicate several Branches to the Maxillary Glandules, through which the late invented *Ductus salivales* pass; and moreover, a Salivation raised by Art seems to confirm this Opinion.

But how the Arteries and Nerves can separate so

So great a quantity of *Spittle*, as we have often known to have been thrown forth in so short a time, seems not possible to me; I do rather derive it from the *Stomack* and *Lymphaducts*, which I suppose to adhere to the *Salivals*, upon the following Reasons.

1. As often as voluntary swallowing is designed, we observe the *Spittle* to ascend as it were from the *Stomack* into the *Mouth* it self, especially if the *Meat* be moistened by *Drink*.

2. The *Tongue*, *Mouth*, and the whole *Stomack* have inwardly a common *Tunicle*.

3. The *Meat* in the *Mouth*, as in like manner in the *Ventricle*, ought to be mixt with *Spittle*.

4. It would be very troublesome continually to drink in eating, for it is very easie for some time to keep the devourd *Liquor* in the *Stomack*, and then sensibly to communicate some part of it to the *Mouth*.

5. The *Lymphaducts* are disperfed through the whole *Body*, and they go both unto the *Stomack* and *Tongue*.

6. I judge no *Humour* to be thrown out of our *Body*, except by peculiar passages; & so for several reasons, I think the *Tears* also to be shed through particular *Channels*; with a more accurate hand, (whether mine or others) may sometimes find out: Yea the most noble *Levis Bile*, the great *Anatomist*, attests to have already discovered them, and promiseth to demonstrate them in the *Body*, and in *Figures* to the favourers of truth.

If you enquire of me of what nature *Spittle* is: I answer, that it is *Salt*; yet 'tis not always necessary that this saltness be perceived by the *Tongue*, which those that understand the nature

of

of Artificial Salts, sufficiently known: It is certain that there is some natural Salt in all Meats and Drinks; 'tis also certain, that Salt not only helps the commixing and concoction of the Meats, but also contributes much to the fermentation of the Humours.

The *Ductus Salivales*, which we have now made mention of, have but one strong *Tunicle*, not unlike the *Ureters*, but that they are lesser:

Of each side one.

They take their *Original*, endued with many Roots, from a certain great Glandule, lying under the Tendon of the *Musculus Digastricus*, not far from the upper part of the Jaw, then they run under the Tongue, above the great Nerve of our eight pair to the more inward parts of the mouth, where, in the two *salivary Glandules* near the bridle of the Tongue, they terminate, from whom being variously perforated, issues out the Spittle into the Mouth; of which the inquiring Reader may more largely satisfy his curiosity out of the writings of *Glisson*, and *Van-Horn*.

The Meat thus chewed by the Teeth, and prepared by the Mouth, through the *Gullet*, by the assistance of proper Muscles, is carried into the *Stomach*, which that it may the better keep it, it presently purseth it self together, so that the upper *Orifice* is close shut, but the lower not so straight, that though very lightly pressed, may there find passage.

The Meat received by the *Stomach*, and Moistened by Spittle, Drink, and its own humidity, forewith by the heat of the *Stomach* begins to be concocted: the *Order* is not observed here, which was in the eating of the of the Meat; yet in the be-



beginning I have observed the Meat to be disposed in the same order, as it was devoured by the Animal that was Dissected, but afterwards the Stomach continually digesting, first sends away, that Meat which is of easiest digestion to the Guts, and it doth not detain it, whilst the other is also concocted, which Loosnesses, and Vomiting evidently enough declare, if you look into the Excrements.

The Meat being concocted, assumes a whiteness like to Cream, and this is call'd *Chile*.

The *Chile* out of the *Stomach* through the *Pylorus* enters the *Intestins*, in which passage there is a notable Peristaltick Motion: Out of this the *Vena Lactea* suck what is useful to nourish the parts, and the unuseful is cast out through the Belly: The *Vena Lactea* consist of one very thin Tunicle, but are endowed with several valves, extended from the Liver towards the Glandules, they are distributed through all the Mesentery, and so are carried for the most part to the small Guts, especially the *Jejunum*, but yet the great Guts are not altogether destitute of them, that none of the nutriment may be lost.

From the intestine, both these Vessels, and the *Chile* contained in them, go to the three Glandules of the *Chile*, the greatest of which is in the middle of the Mesentery, call'd by *Afellius*, *Pancreas*; the two lesser, are call'd the *Lumbar Glandules*, situate near the left Kidney.

Each of these Glandules send forth a branch, which joyning above the left Kidney, constitutes a Vessel, call'd *Vena Lactea*, about the bigness of a great quill.

This great *Lactean Vein* lying between the *Arte-*

*ria aorta* & the *Vertebra's* of the *Loin's*, cover'd with fat, runs upwards, and above the *Heart*, ascends by the *Gullet*, and so hastens to the *left Subclavial Vein*, where it ends in one, two, or three branches here a most thin valve occurs at the very end of the *Vein* looking inwardly, that the *Chile* might not return back again, or run further into the *Arms*; out of this *Subclavial* they descend by the *ascending Trunk of Vena Cava* into the *right Ventricle of the Heart*, that there by the help of the heart, and natural quality, it may be changed into *Blood*.

Being converted into *Blood*, it passeth by the *Pulmoniack Artery* to the *Lungs*, which are by part of it nourished, and the rest of it goes through the *Pulmoniack Vein* to the *left Ventricle of the Heart*, that it may be more perfectly elaborated, thence by the great *Artery* is carried to all the parts of the *Body*, communicating to them nourishment for the preservation of *Life*.

These ways of Conveyance is displeasing to some, who would rather retain that by the *Meseraick Veins* known, and so greatly cryed up by the *Antients*, than admit of a new Truth; therefore they say, that the *Chile*, together with the *Blood*, may by this way be most conveniently carried to the *Liver*, seeing that the *Venal Blood* is carried not from the *Liver* to the *Guts* (which was the false Opinion of the *Antients*) but from the *Guts* to the *Liver*, and so not here to be allowed a contrary motion of each *Liquor*, already sufficiently known.

But in truth these Opinions they defend rather by a probable ratiocination, out of their old affection to the *Liver*, than that they can make out by

by natural or demonstrative Arguments, or answer these Queries following.

1. What is the use of the Lactal Veins?
2. Why is their rise in the Guts?
3. Why the *Valves* are so plac'd, that they may hinder the regress of the Chile into the Guts?
4. Why do they all go together with the Chile, to the *Glandule* of the Chile, and none of them to the Liver?
5. Why are the great Lactal Veins joyned together?

6. For what end doth the Chile pass into the Subclavial Veins? All which can be made appear in the body to the sight.

That part of the Blood which is not altogether use-  
less, yet not fit for Nutrition, passeth out of the  
Arteries, ever joyned together by Inosculations  
with the Veins into the *Vena Cava* and *Porta*, and  
so by their means is brought again into the Liver  
and Heart, that it may be amended, and again  
concocted.

I do not only say that the Blood is carried by  
the *Vena Cava* into the Heart, but also by the *Ve-  
na Porta* into the Liver, which I prove by these  
Reasons.

1. The Liver is the biggest of all the Viscera; not  
that I would infer its preeminence from its great-  
ness (see Chp. 2.) but I suppose Nature would  
never have created so great a Body, but for the  
performing of some extraordinary operation.

2. Its greatest Vein, coming out with a large Ori-  
fice, forthwith goes, so and enters the Heart. What  
necessity is there for the *Vena Cava* to be distribu-  
ted with such numerous branches through the  
Liver, and so presently to ascend into the Heart?

for

for indeed it ought to convey back the Blood not amended. Its Trunk likewise, and that of the *Arteria Aorta* might ascend directly up the Body to the Heart without concerning it self with the Liver, especially when the *Vena Porta*, near the Liver, may also yield sufficient wayes for freeing all the Blood from Choler: It ought to receive the Blood concocted in the Liver, and convey the same to the Heart.

3. *Its colour is Red.* I well know that it is sometimes observed to be White, Pallid, Yellow, Green; but this colour is to be ascribed to the Disease, not to its natural Constitution, for in all Bodies perfectly sound, it is found Red.

What wonder is it, that the Liver being red, in weakness should contract a whiteness; doth not a red face grow pale, when the Body is affected with sickness? how easily likewise that the Liver separating the Choler, should be dyed with a Yellow or Green colour? 'tis also observed in the first xx or xxx days after conception it is naturally white, neither becomes red, before the maternal Blood (concerning which, some of the Moderns have far otherwise ascribed) comes to the nourishment of the already formed parts, which is the same in all *Spermatick parts*, even in the Heart it self: but will you conclude from hence, that this red colour only happens to the Liver, and is not more proper to it than it is to the Muscles, which yet therefore do not make Blood? To this I answer, that the affluent Blood is so necessary here, & so appropriated to the Liver, that without it, it cannot be call'd a perfect Liver; but both the colour, substance, and number of Vessels, are so different in a Muscle, and in the Liver, that in no

wife

wife the parts merit to be said to be like one another, and what absurdity is it, to say that a *Muscle sanguifies*, when even the Heart it self by the principal Anatomists, and Phylosophers, is acknowledged a Muscle.

4. *The Maternal Blood comes first by the Umbilical Vein to the Liver, ere it goes to the Heart of the Infant*, and the Valves and Ligatures evidently demonstrate, that the Arterial Blood is carried by the Umbilick Arteries from the Child to the Womb, but the Venal by the Umbilick Vein from the Womb to the Child; but whether the Infant is nourished by the Maternal Blood, or by an External Humour, like as a Chicken in the Egg, is to me all one; when 'tis evident, the Blood, which either coming from the Mother or Infant, passeth first to the Liver, before it enters the Heart.

5. *The Choler is separated from the Blood in the Liver*, for every one knows that there can no separation be made without there be first a concoction.

From all these Arguments I cannot gather any thing, but that the returning Blood is carried by the *Vena Porta* to the Liver, that it may there be purified, and in some manner concocted, in which its operation, that the Blood may be rendred more perfect, 'tis carried to the Heart; especially when by reason of its continual and necessary pulsation, the Blood cannot remain long in the Heart; and for this reason I judge, the whole Blood must needs be moved about with a Circular Motion.

The Blood made in the Liver, as is declared but now in the eighth Chapter, enters



the *Vena Cava*, and from thence into the Heart.

And thus the royal Liver, at the same time, when Kings are taken away, may yet use a limited power, and may remain with Honour in its own Kingdom.

But what shall we do with the Melancholick Spleen, which makes many laugh? it hath many accusers, and not fewer excusers.

1. It was never accounted by *Hippocrates* the Learned *Greek*, a receptacle of the Excrements, or is it any where to be found in him, that he call'd the Spleen another Liver.

2. The great number of Veins and Arteries, and so by consequence the abundance of Vital Spirits, do not permit the Excrements to be collected here.

3. It hath not any convenient Cavity, wherein the Melancholy Fæculent Juice can be received.

4. And if you imagine that there is no necessity here of a Cavity, its Parenchima is too thick, and not porous enough, therefore unfit for the reception of so thick a Humour; which also is never naturally found in it.

5. It is too great a Bowel to perform so vile an Office.

6. In dead men, where Melancholiness hath been the cause of their death, upon the examination of the Internal parts, there none of them less recede from its natural state than the Spleen, the Heart only excepted, whom the Vital Spirits do so greatly defend; that it is less affected than other parts, which seldom happen to the intestines, Kidneys, Gall, and Bladder.

What is therefore its Use? it elaborates the Acid

Acid Humour which is very necessary, but not Excrementitious, and mingles it as a Ferment with the Blood, by which it becomes more perfect, and fitter for Circulation.

In my judgment the Salt of the Blood affords matter to this Humour, which it greatly requires that it may not be corrupted; but this Salt which proceeds from the Meat and Drink, is never so pure, but that it hath need to be brought to a more perfect state in our Body. But this I say,

The Supremest of the Kings is the heart; to this are two others subject, the Liver and Spleen (I beseech you give me leave to make use of this Similitude in favour of the Antients) the *Heart* makes the Blood, the *Liver* repeats the Concoction, and separates the Choler; the *Spleen* from its own Salt, by an innate vigour produceth an Acid Humour, which as a Ferment by the Venal Splenick branch it mixeth with the blood, to render it the perfecter, and the more fit for Circulation; if any Excrementitious part should be there separated, it is all by the Celiac Arterie, and the Hemorrhodal Vessels sent to the Guts.

If it appears to any one to be contradictory, that by Salt, a Humour should be made Acid, we advise that man to tast some Spirit of Salt.

About sixteen years since, the great Anatomist *Franciscus Sylvius* put forth some particular things concerning the use of the *Spleen*; he was of Opinion, that the Blood was not made in the *Ventricles* of the Heart, neither that it was carried from the Heart by the Arteries to all the parts of the Body, for nourishment-sake alone, but that it likewise underwent some other Muta-

tion in the rest of the Viscera's, particularly the Spleen further concocts the Arterial Blood, and brings it to a higher degree, yea that it more then perfects it so that the Blood in a manner in this place assumes the nature of Ferment, by whose means in a short time a great quantity of the Mass may become acid in the same manner he affirms that the Blood more and more concocted in the Spleen, there receives strength, by which it restores the returned and weakened Blood, and preparing together with the Chyle, that it may the sooner be turned into Blood: The Reasons which he produceth for it are these.

1. The Spleen receives a much greater quantity of Blood from the Heart, than is necessary for its nourishment.

2. That it can be returned back again to the Heart by no other way than by the Branches of the *Vena Cava* and *Porta*; for what hath hitherto been delivered of the short Vessel, are to be accounted but ridiculous Fictions, as may most evidently be made appear in Dissected Bodies.

3. Seeing this Blood is continually mixed with the returned Blood and Chyle in its passage to the Heart, it ought not to be an Excrement; for so the Noble Parts, and the whole Body would not be purged, but the more injured.

4. Chymistry hath long since taught us, that such mutations happen daily in Nature.

The remaining part of the Blood, unuseful to the Body, therefore Excrements, is thrown out through the *Guts*, *Ureters*, and *Pores* of the *Skin*, &c. concerning which it is not necessary to add more here; but now we are forced to describe

scribe those new watry passages, which the studious in Anatomy have long and diligently inquired into. The *watry passages*, the *Lymphatick Vessels* have their rise both from the *Liver*, and from the *Joints*, and receive the liquid Juice from the Arteries with which they correspond.

Those which come from the *Liver* embrace the *Vena Porta*, and so pass to the Mesaraick Glandules of the *Chile*, as doth those also that ascend from the Feet, thence they discharge their Water into the great Lacteal Vein, which as we have already declared, carries the *Chile* to the Heart.

Those which proceed from the Arms, both lie above and under the Veins, until they come to the Subclavial Vein, which they enter about the same place, where the great Lacteal Vein doth, being furnished with a particular valve just at their entrance, and so altogether they carry the Water to the Heart.

This Water is Sweet, not being as Urine is, Salt.

These Vessels consist of a very thin Tunicle, whence they are soon broke.

Use of them in my opinion, is to take the superfluous Water from the Arteries, and carry it to the Glandules of the *Chile*, and Lacteal Vein, by which the *Chile* being made more Liquid, may the more conveniently be conveyed through the narrower passages, thence to return the same to the Arterial Blood, making it fitting to serve to the nutrition of the moist parts, and to the cooling and moistening of the hot.

But that it may the more clearly appear, in what manner I conceive, how what hath already been said, is performed in our Body; observe that

the Meat is converted in the Stomach into Chyle, to which part of the Drink is mingled, this mixture is carried through the Glandules of the Chyle and the great Lacteal Vein into the Heart, where it is changed into Blood, which is by means of the Arteries to be conveyed through the whole Body; every part of this Blood nourisheth those parts which are of the like temperament with it self, the Hot part of it nourisheth the Hot; the Dry, the Dry; the Moist, the Moist, &c. that which is here not well concocted, must be brought back again to be perfected. Why we say that the Veins are not sufficient, and the passages not commodious enough to perform the same, whole Office we know is to bring back to the Heart the Blood not sufficiently concocted; the Reason is, that the Water always remaining in the Vessels, rendered the Blood too thin, so deprived it of its natural consistence and strength.

From all these so clearly and distinctly laid down, it sufficiently appears what the CIRCULATION OF THE BLOOD is, to wit, a continual motion of the Blood out of the Arteries into the Vena Cava and Porta to the Liver and Heart, that in them it may be fitted for the Nutrition and Life of the whole Body.

Out of the subtlest part of the Blood are the SPIRITS produced, which are two-fold:

1. *Vital*, which begotten in the Heart, carry life to the parts of the Body.
2. *Animal*, who out of the Vitals Elaborated in the Brain, impart Sense and Motion to the Body.

The Natural at the same time that the Circulation of the Blood was found out, vanished.

Chirurgi-



*Chirurgical Considerations.*

1. The *Ductus Salivales*, when the string of the Tongue is to be cut, or the Ranine Vein to be opened, or any other Disease of the Tongue that is to be cured by Manual Operation, warn you to have great care of those little Glandules in which they end, that they might not be hurt with the Lancet, lest there follow a continual spitting.

The *great Glandule* also of the Neck, from whence these Ductus's take their rise, when it is inflamed, admits not of the use of Mercury; for from hence a dangerous Salivation may very easily be raised.

2. The *Lactéal Veins*, either the *greater* or the *lesser*, are oftentimes from a Contusion or Wound so grievously hurt, that they cannot carry the Chyle to the Heart; and though the Wound be cured with great diligence, care, and speed, yet the Patient will fall into a Consumption, whence follows Death inevitably: This Truth will defend Chirurgions from many Calumnies,

In Children, and older People, is often perceived an induration and inflammation of the Abdomen; the cause of which is the hardness of the Meseraick Glandules, which allow not passage for the Chyle to the great Lactéal Vein, except the very thinnest of it, whence the flesh of the Muscles wasts, the Body becomes heavy, and weary, and at length a Fever, and a wasting of the whole Body. This evil I use to remedy without any great trouble, with this External Liniment:

Take compound Oyntment of Marshmallows,

Oyntment of Sowbread, of Martiaton, of each two drams ; Oyl of White-Lillies, of Camomile, of each three drams : Mix it into an Oyntment.

Inwardly the following Troches are Excellent, being continually used the whole time of the Cure.

Take prepared Steel, prepared Crabs-Eyes, of each a scruple ; Vitriolated Tartar, half a dram *Sal Prunella*, xvi. grains ; *Species Aromatici Rosati*, a scruple ; White-Sugar, two ounces : Make them into Troches according to Art.

In this Case *Purging* is not to be used, but with *Cassia*, Cream of Tartar, and Laxative Syrup, for the *Glandules* will not bear strong Purges.

3. The Blood taken out upon the opening a Vein, oftentimes after some few hours space, appears very dry, and destitute of all *Serum*, which for the most part is ascribed to its too great Heat and Aduſtion : But this Argument is very invalid, for if the same day, the same, or another Vein be again opened, there will be found a great quantity of *Serum* in the Blood ; therefore the true Cause is to be deduced from the Circulation of the Blood, but especially in the *Lymphatick Vessels*, which at that time draws the *Serum* and *Humidity*, and so leaves the Blood dry.

It very often also happens that the Body becomes *Tumid*, *Turgid*, and *Languid*, upon which the fearful Physitian forthwith pronounces naught but danger.

When with the use of Internal and External *Sudorificks*, the Patient in a short time may be cured : The Cause of this Disease is not from the intemperature and debility of those parts the

Antients

Antients call'd Noble; for it may easily be distinguished from the *Dropsie*, which these parts occasion; for although the sick persons are very dull and weary, yet are they not anxious, but breath free, and the Belly swells not much. In the Face, and Joynts especially, is a watry matter collected; but if the swell'd parts are compress'd by the Finger, we perceive much less *Serum* to be contained in the parts, than in a true *Dropsie*; from whence those that understand not the true Cause, are wont to ascribe this inflammation to wind; But the *Lymphatick Vessels* when compress'd, broke, or by any other way obstructed, so that the Natural motion of the Lympha is hindered, occasions this evil.

4. *The Circulation of the Blood* requires all venemous, and *deprav'd* Humours, which are thrown out either by Nature it self, or that outwardly happen to the Body, at the very first instant, forthwith to be expell'd out of the Glandules and the Skin, by the means of attractive Medicines, lest that the whole Blood in a very short time be infected, and the Heart it self oppress'd, and suffer under it: The which doth sufficiently declare how dangerous it is to open a Vein, and to Purge, in a Venereal and Pestilential *Bubo*, nay, in all venemous Wounds; as on the contrary, how necessary it is to cast forth the offending matter; by the use of Sudorifick and attracting Medicines; As moreover how that the invention of the Circulation of the Blood is of very great use in the Art of Physick.

## C H A P. XV.

*The Division of the Body.*

**M**Ans Body is most conveniently divided into the *Venter's*, or *Regions*, and *Joints*.

There are **THREE** *Venter's*;

1. The *Head*, or the Supream Region or Cavity, to it is joyned the *Neck*, which is its prop.
2. The *Thorax*, *Breast*, or middle Region.
3. The *Abdomen*, *lower Belly*, or lower Region.

The *Joints* are the two *Arms*, and the two *Leggs*.

*Chirurgical Considerations.*

We divide the Body after this manner, that it may be known what place each part of the Body ought to keep; to those that read the following, every thing will become more manifest.

But there is so great *consent* of all the parts, so great concord, that no part may be by it self considered, without a consideration of the whole; therefore I think it necessary, that in a few words the foundation of this mutual consent be here declared.

1. In every part is required a *natural temper*, for the Liver being too hot, the Stomach too cold, the Brain too dry, &c. the whole Body must be out of order.

2. A *sufficient number*, for in the Hand, if the  
least

last Bone, Tendon, or Artery, &c. be wanting, so that its operation is injured.

3. A *just magnitude*, one Foot greater than the other, causeth a troublesome walking.

4. A *natural Figure, softness, thickness*, yea, colour it self.

5. A convenient connection, and sight.

6. The *presence of the Vital Spirits*, which are brought to the part by the Arteries.

7. The *presence of the Animal Spirits*, which are carried by the Nerves.

8. Outwardly the *Skin*, the covering of the whole Body; inwardly, the *Dura Mater*, the covering of the Brain, Palate, Tongue, Jaws, Breast, and lower Belly, requires also a particular consideration.

9. It is also necessary that the Nutriment be well concocted, naturally carried, and received, that there may no defect be observed in the parts.

*The end of the first Book of the third Part.*

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The



The second Book.  
Of the HEAD.

CHAP. I.

Of the outward parts of the Head.



He Head, as Supream Lord both of its own, and of a thousand other Bodies, not only governs it self, but others well, when formed with a healthy Constitution, and instructed with the knowledge of its own Office; but they live a miserable life, whose Head is not justly and with Art composed, and who neither inquire into, or know its Substance or Figure.

Its Figure is Oval, the upper part is call'd *Vertex*, the fore-part *Frons*, the hinder-part *Occiput*, the sides *Temples*, the rest is call'd the *Face*, and consists of the following parts.

First appears the *Skin*, in several places endow'd with Hair, but in all with a scarfe Skin.

Under this lies the *Membrana Carnosa* and *Pericranium*, which takes its rise from the *Dura Mater*

Mater; and passing through the Sutures of the Skull, first invests the Skul, then all the other Bones.

Anatomists that are very curious, make the *Pericranium* to be double; the outward retains the old name of *Pericranium*; the inward is call'd *Periostium*.

The Bones which lye under these Membranes, first, we divide into the Skul, and Jaws, then into many other Bones.

The Skul is composed of eight Bones, joyned together by proper and common Sutures.

The proper Sutures are true, or spurious.

The true are three.

1. The *Coronal*, 2. The *Sagittal*. 3. The *Lambdoidal*.

The Spurious are the two *squamous Sutures* of the temporal Bones.

The common are three likewise:

1. The *Frontal*. 2. The *Sphenoidal*. 3. The *Ethmoidal*.

The Bones themselves which have many perforations and Cavities for the passage of the Air, of the Veins, Arteries, and Nerves; are eight:

1. The Bone of the Forehead, alwayes in Children, sometimes in old people, is divided just to the root of the Nose by the sagittal Suture.

- 2, 3. The Bones of the fore-part of the Head, or *Bregma*.

- 4, 5. Temporal Bones, or *Petrosa*.

6. The *Lambdoidal*, or Bone of the hinder-part of the Head.

7. The *Sphenoidal*, or Wedgelike Bone.

8. The *Ethmoidal* Bone, or *Cribrosum*.

The Muscles of the Forehead are the two *Assolentes*;

*lentes*; Muscles of the *Hinder-part* of the Head are the two *Deprimentes*.

The *Jaws* consist of several Bones conjoynd so by Harmony, that in old people they appear but as one; the one is call'd the upper, the other the lower Jaw.

The upper Jaw is composed of eleven Bones, of each side five, the odd eleventh is placed in the middle.

1, 2. *Os Zygomaticum*, or yoke-bone, makes the lower part of the Orbit of the Eye, constituting with its *Apophisis* the *Os Jugale*, or *Zygoma*.

3, 4. *Os Lacrymale* makes the Internal corner of the Eye, having a large Orifice descending to the Nose.

5, 6. *Os Maxillare*, or Jaw-bone, particularly so called, which is the greatest of all the Bones, which constitutes the Jaws.

7, 8. *Os Nasi*, or Bone of the Nose, which in its end hath five united Cartilages.

9, 10. *Os Palati*, or Bone of the Pallar.

11. *Vomer*, a peculiar Bone above the Pallar, which supporting the interstice of the Nose, and joyned to it by Harmony.

The upper Jaw moves not but when the whole Head moves, therefore needs not proper Muscles.

The lower Jaw (which generally remains divided in the forepart till the eighth year, and afterwards is so closely joyned together, as it appears to be but one Bone) hath two Processes, and in them a Cavity, big enough to allow a convenient Situation to the Veins, Arteries, and Nerves, from whence the Teeth receive their Nutriment and Sense: The Branches of the Nerves about the Chin, pass out again through a little Orifice

muscles, are distributed into the Muscles of the

It is moved by six pair of Muscles, which are

1. *Pterygoideus Internus*, } *Attollentes.*
2. *Digastricus*,
3. *Latus, Deprimens.*
4. *Pterygoideus Externus*, bringing them forward.
5. *Masseter.*
6. *Musculus Temporalis.*

This Muscle hath this peculiar to it self, that it is covered by the *Pericranium*, by which the adjacent temporal Bones are altogether destitute of it, which is not observ'd in any other part of the body. But no Man hitherto as I know of hath yet given the reason of it; for whatsoever hath been delivered by others concerning this, hath been so slight, that they give little satisfaction to the lovers of Truth. But of late, *Job Mekeren* an Experienced Chirurgeon of this City, hath in an Epistle communicated something particular relating to this matter, the substance whereof I here give you, until he put forth his Observations, (some of which I have seen.)

To

Dr. PAUL BARBETTE

Physician at Amsterdam.

SIR,

I Will truly declare to you my Opinion concerning the Question I informed you I had moved in the company of some Physicians, which was *Why the Bones* which

which lie under the temporal Muscles are not covered and invested by the Pericranium, as are the other Bones.

On the 6th of January 1654, being commanded by the Honourable Senate of this City to open the Head of PETER JACOES, Bricklayer, then was my Opinion, with which I had been hitherto big without sufficiently confirmed; for as soon I had observed a great depression in the upper part of the Skul, I also found a great quantity of Coagulated Blood, which had part of it past through the Ears, and part of it remained yet in the Cavity of the Ear, then being very desirous to know the way by which this blood had descended into the Cavity of the year, which when I had diligently inquired into, I also discovered the reason, and cause, wherefore the Pericranium covers in this place the temporal Muscles, and not the Bone under them.

First, the Opinion, and the Answer, ( which the Honourable and Experienced Dr. TULPH Burgomaster of Amsterdam, had given to the propounded Question, to wit, from whence this Blood should come, which very often in Wounds of the Head flows out of the Ears? ) I found to be true, and reasonable; for I perceived, as the Noble Consul had affirmed to me, that the Blood from the upper part of the Head, did descend between the Skul and Pericranium, and so did enter the space that is between the Os Parietale, and Petrosum, and from thence to be as it was strained through a Sieve into the Cavity of the Ear; afterwards in searching further, I found the Os Petrosum to be removed a great distance from the Os Parietale, so that in the place where the Bones did recede from each other, was a motion observed, beginning at the Os Petrosum, and ending in the Os Parietale,



ietale, there where the Toothy union is in the Os Ju-  
gale in the inward part, which is covered with a  
Callus ( as it ought to be in every Articulation ) to  
prevent bruising, is observed.

And this being so, it may be concluded, that the  
Pericranium, if it had invested the Bone under the  
temporal Muscles, without all doubt it would have  
passed it self between the Os Petrosam, whence from  
its moving and rubbing in eating, speaking, or any  
other motion, would have alwayes felt intolerable  
pain. Thus have you, Sir, what I thought ( hoping  
to proceed further ) the reason to the Question pro-  
pounded, &c.

Farewel.

This Opinion is indeed Judicious, and very pro-  
vable: for in dead mens Skuls, the upper Bone  
of the Temple is movable as is the lower, and in  
the Suture of the Zygomatick Bone, is a Cartilage  
found, which is necessary in every Joint. For  
I confess the motion is little, but greater would  
not be required, than what sufficeth to afford pas-  
sage to the thick Humours, either from External  
or from Internal Causes, collected sometimes in  
the Cavity of the Ear, by the which the Brain  
and Ears may be freed from many and various in-  
conveniences: I hope time and diligence will  
give us greater light in this thing.

Each Jaw is armed with necessary weapons,  
which are call'd Teeth.

In Men, for the most part thirty two, in Wo-  
men twenty eight.

Four, are call'd Foreteeth or Cutters.

Two, Dogg, or Eye-teeth.

All the rest are call'd Jaw-teeth, or Grinders.

T

After

After the 30, 40, 80th year, oftentimes cometh forth with pain, two Teeth in the very further part of the Jaw, which some call the *Teeth of Manners*, or *Wisdom*, others the late Teeth.

Before we come to the other Muscles of the Head, we deem it necessary to describe some parts which are not as yet mentioned, that is the Eye, Ear, Nose, Mouth.

The Eye with the Lids, to wit, the Membranous coverings before Cartilaginous, and Hair defend from External injuries; hath two Corners or Angles.

In each Corner is a Glandule; that which is in the lesser External Corner, is great, white, hard, that in the greater External Corner, is lesser, soft, red, and covers the *Punctum Lachrymale*.

Four Tunics contain the three Humours.

One of them which comes from the *Pericranium* is likewise common to the Lids, and is call'd *Conjunctiva*, or *Adnata*.

The other three are proper, and are thus Reckoned.

1. *Cornea* coming from the *Dura Meninx*.

2. *Uvea*, from the *Pia Mater*; this sometimes dilating itself, then again contracting it self, constitutes the *Pupil*, shewing the many coloured Oval Circle, call'd the *Iris*.

3. *Retina*, from the Brain it self, or rather from the Optick Nerve; which proceeding further, is changed into the *Arenæa*.

To these three may be added a fourth, *Vitreæ*, which is illy omitted by many.

The Humours of the Eyes, are

1. The *Aqueous*. 2. The *Crystalline*. 3. The *Vitreous*.

The

The *Optick Nerve* brings the Spirits for sight ;  
the *Motorius* for motion.

*Branches* of the *Internal*, and *External Carotide*  
*Artery* bring to it the Nutritious Blood ; and the  
superfluous is returned by the *Internal* and *Exter-*  
*nal Jugular Veins*.

Fat and Muscles make up the rest of the Eye.

The Fat serving to the Calcification , Humecta-  
tion and better motion, is here in great quantity,  
every where distributed between the Vessels and  
the Muscles.

The Eye-lid hath four Muscles.

One *straight* Muscle ; three *Orbicular*.

The Eye it self hath six , of which four are  
*straight*.

1. *Attollens*, or *prond*.

2. *Deprimens*, or the *humble*.

3. *Adducence* , or the *Drinking* , or *reading*  
*Muscle*.

4. *Abducens*, or *disdainful Muscle*.

Two *oblique* , which are call'd the *Lovers*  
*Muscles* ; of these

1. *Obliquus Externus*, or *Troclearis* , because it  
passeth through a *Pully*.

2. *Obliquus Internus*.

The *outward-Ear*, or the *Cartilaginous Auricle* ;  
is joyned to the Bone of the Temples.

It hath a very sensible *Membrane* , and behind  
it also some *Glandules* , to which the Head sends  
the superfluous Humours.

*Vessels*, it receives from the *External* and *Inter-*  
*nal Jugular*, and *Carotide*.

*Nerves*, from the second pare of the *Nerves* of  
the Neck, as also from the six pare of the *Nerves*  
of the Brain.

276 *Of the outward parts of the Head.*

Here is but little *Fat*, what little there is, below the *Lap*, it receives four *Muscles*, of which the three former are to it common with other parts, the fourth proper to it self.

1. *Antrorsum Ducens*, which moveth it forward.
2. *Retrorsum Ducens*, which pulleth it backward.
3. *Quadratus*, *deorsum trahens*, pulling it down.
4. *Tripartitus*, lifting it up.

The inward part of the *Ear* hath four Cavities for sound, and for defence and strength as many *Bones*.

The Cavities are,

1. *Meatus Auditorius*, whose extremity a firme and strong Membrane covers, which is call'd the *Tympanum*, and Membrane of the Drum.

2. *Timpanem*. 3. *Labyrinthus*. 4. *Cochlea*.

These little *Bones* are of the same bigness in Childrer, as in older people; which are

1. *Malleolus*, or the Hammer.
2. *Incus*, or the Anvil.
3. *Stapes*, or the Stirrope.
4. *Os Orbiculare*, or the Orbicular Bones.

The Noble *Lewis de Bils* the great Anatomist, in a particular Treatise shews, that the *Os Petrosum* ( which hitherto by reason of its great thickness and solidness, was a vast hinderance to those that had a desire to view these *Bones* of the hearing in their Natural Situation ) not to consist of one only Bone, but to be made up of four, joyned together by Harmony, which may very easily be separated by Art.

Within are two *Muscles*, the one joyned to the

is, the *Meatus auditorius*, the other to the *Malleolus*.

The *Nose* covered with a Scarfe skin, Skin, Muscles, and the *Periostum* hath two Cavities separated by a Cartilaginous *Septum*; each of these again is divided into *that* which ascends to the *Os Ethmoides*; and into *that* which descends above the *Pallate*, into the further part of the Mouth.

The sides of it are call'd *Pinnae*, *Alae*, or Wings; the lower fleshy part is called *Columna*, or the fleshy Pillar.

In the inside they are invested with a thin *Membrane*, which is very sensible, arising from the *Dura Mater*, which is as to the *Nose* likewise, common to the Mouth, Palate, Tongue, Larinx, Gullet, and to the Stomach it self.

The *Bones* of which it is compounded are many and Spungy, replete with *Caruncles* that the Snot might involuntarily distil forth.

*Arteries* from the Carotide, bring nourishment to it: *Veins* from the Jugular return the Blood that is not perfectly concocted. *Nerves* from the first pare according to our order serve for the smelling, as do those from the fifth pare serve to the feeling.

It hath no *Fat*, its *Bones* we have already given you, its *Muscles* are six.

1, 2. *Deprimentes*, depressing the *Nose*.

3, 4. *Dilatantes*, or dilating the *Nostrils*.

5, 6. *Constringents*, or pulling the *Nostrils* together.

In great *Noses* there are likewise two other Muscles, which we call'd *Aperientes*, which open the *Nostrils*.

The Mouth the Gate of Air, Speech, and nourishment,



ishment, hath two *Lips*, the parts of each side, call'd *Cheeks*, as that below is call'd the *Chin*.

The *Lips* have two *Muscles* common to the *Jaw*.

1. *Quadratus*, or drawing backward.
2. *Buccinator*.

The *upper Lip* hath two *Muscles* proper to it self.

1. *Sursum Trahens*, or drawing it upwards.
2. *Deorsum Moveus*, or moving it downwards.

The *under Lip* hath but one, *Deorsum trahens*, or drawing it downward.

Common to both the *Lips*, are

1. *Oblique sursum trahens*, or drawing them obliquely upwards.
2. *Oblique deorsum trahens*, or drawing them obliquely downwards.
3. *Sphincter Oris*, *Constrictor*, or *Orbicularis*, which purseth the *Mouth* together: The inward parts of the *Mouth*, are the *Teeth*, the *Gums*, *Palate*, *Uvula*, *Tongue*, and *Os Hyodes*.

Of the *Teeth* we have treated.

The *Gums* offer nothing worthy a particular consideration.

The *Palate* consists of a sensible Membrane common to the *Stomack*, which hath its rise from the *Dura Mater*.

The *Uvula* is a long little Body, it hath two Ligaments, and as many Muscles, but very little.

The *Tongue* (as a *Sword* cutting out Honour either well or ill, as it is moved by pure, or impure Spirits) behind, is fastened to the *Larinx* *Os Hyodes*, to the *Jaws*, and to the *Tonsils*, before to a certain Membranous and strong body, whose extremity makes the *string* of the *Tongue*.

Of both sides the string lies a Glandule call'd *Lamina*, from the Neighbouring Vessels.

It hath two *Veins* call'd *Ranines*, from the *Jugulars*, two *Arteries* from the temporal, two great *Nerves* from the seventh pare, as also many little ones from the fourth and fifth.

It is destitute of *Fat*.

Its Muscles are

1. *Genioglossus*, which brings the Tongue forward.
2. *Styloglossus*, which draws it upwards.
3. *Myloglossus*, which draws it obliquely upward.
4. *Basiglossus*, which draws it straight upwards.
5. *Ceratoglossus*, pulling it downwards.

Or *Hyodes*, by the assistance of Muscles and Ligaments, is tyed to the sharp process of the temporal Bones, and to the Buckler-like Cartilage of the Larinx, it is composed of five united Bones; the middlemost of these, which is the greatest, call'd the *Basir of the Tongue*, hath two Cartilaginous Productions, which often degenerate into Bones.

It hath four Muscles on each side:

1. *Geniobyodes*, raising it upwards.
2. *Sternobyodes*, moving it downwards.
3. *Styloceratobyodes*, obliquely bringing it upwards.
4. *Coracobyodes*, obliquely drawing it downwards.

All these are the outward parts of the Head, which is either solely moved by its own proper Muscles, or together with them likewise with the Muscles of the Neck; these shall be treated off hereafter.

The proper Muscles are,

T 4.

1. *Flectens*,

1. *Fleſſens*, or the nodding Muſcle.
2. *Splenius*, or the Muſcle that ſhakes the Head.
3. *Complexus*, the aſſociate, of the *Splenius*.
- 4, 5. *Obliqui*, drawing the Head obliquely backward.
- 6, 7. *Reſti*, drawing the Head ſtraight backward.

### *Chirurgical Conſiderations.*

Very many, as well Internal, as External Diſeaſes, take their riſe from the Head, which is not improperly compared to a Houſe-roof that receives the vapours of the whole Houſe; which afterwards being changed into a Catharr diſtills upon the inferiour parts, creating a Pain, and Piſſie in the Joynts; an inflammation in the Eyes and Jaws, &c. A ſhortneſs of breathing in the Breſt, and in the Stomach a depraved Chylification; in the Guts, a looſeneſs, &c. ſome of the External Diſeaſes ſhall here be conſidered by us, the Internal belong to the conſideration of the Phyſician.

1. There is often in the Head, a *Porriſo*, *Achor*, or *Favus*, which is a cruſted Scab, happening as well in old as young people; theſe Scurffs are oftentimes very thick, ſometimes accompanied with moiſture, which cauſeth great itching, and a very ill ſmell.

The *Cauſe* is ſalt Phlegm; it is for the moſt part a ſtubborn Diſeaſe, and very eaſily returning again.

The *Cure*.] In this caſe are generally uſed, ſtrong Purging, Bleeding, Sweating, Salivation, Unctions, pulling out of the Hairs: But without uſing any

any of these Remedies, I have often cured this Disease, only with this Decoction.

Take Ashes, ( which are call'd by the *Dutch* *Wiedasch*, in *English*, Pot-ashes, ( with White-Wine, make a *Lixivium* of a moderate Acrimony, in a quart of which, boil the Leaves of Marjaron, Southernwood, of each two handfuls; of Maiden-hair, a handful & half; red Rose-leaves, three pugils: Make a Fomentation.

With this let the Head be washed twice or thrice a week warm, then dry it well with hot Linnen Clothes, and in a few weeks space, the Patient with thus doing, will be cured: You may likewise sometimes use gentle Purging Medicines.

2. In a *Hydrocephalus*, and great *Catarrhs*, an Issue with great success may be made in the Nape of the Neck, because the Cavity's of the *Dura Mater* are thereabouts joyned to the Jugular Veins; especially in Children, in whom very often the Sutures do too much gape.

3. *Fat things* hurt the Head, because it is not covered with many Muscles.

4. In the Skul sometimes a tough matter is collected in several places, which if not removed by those Medicines that purge Phlegm, and outward discutives, in process of time acquire a very great hardness, which still increasing, grow into a perfect Horn, not to be cured, but by Chirurgery.

5. Upon the Skul likewise comes other abscesses, which although they may belong to a *Steatoma*, *Atheroma*, or *Melicerides*, yet in the Head especially are call'd, *Testudo*, *Talpa*, *Natta*. These give little hope of Cure, where the Bone is much corrupted;

captured; otherwise they may be taken away by a Thred, or what is better, by a Knife, when they reject other Remedies. The manner of taking them away by a Knife, is this; the Skin being divided in form of a Cross, the Bladder is to be taken out, then the *Pericranium* being separated, the *Cranium* is to be scraped with a *Raspatory*, till you come to the sound part, then sprinkle upon it some Astringent Powder, and let the skin forthwith be consolidated again, which if it be too loose, a little part of it may be taken away, which is very seldom necessary to be done, when it may be closed enough in the time of the Cure.

6. If the *Sutures* of the Skull are too open, they bring a weakness upon the Brain; if they are too straightly united, they cause pain of the Head. Experienced Chirurgions affirm, that it is as safe to use the Trapan in the very *Sutures* themselves, as any other part of the Head.

7. The *Muscles* of the Head occasioning nothing differing from other *Muscles*, except upon a Wound, or Contusion of the temporal Muscle, a Convulsion easily follows; neither ought it to be transversly divided, lest there happen a distortion of the Mouth.

8. The *Teeth*, seeing they neither are furnished with Membranes, nor Nerves, are altogether insensible; but they which attribute the pain to those Membranes which cover the *Alveolus*, it ought to be ascribed to many Nerves that are distributed through them; yet the Causes in this Case are various, and must be well distinguished, to wit, 1. a hot Distemperature, 2. a cold distemperature, 3. a sharp humor, 4. a solution of continuity.

In



In a hot distemper, Bleeding, and Purging is very necessary; apply Cupping-glasses to the Neck and Shoulders; let the Head be Purged with Errhins: In the beginning, this Water being held in the Mouth, profits much.

Take the Roots of Tormentil, an ounce; Leaves of Vervain, a handful and an half; Flowers of Balaustians, two pugils; Cipress-Nuts, two drams; red Saunders, three drams; Scales of Iron, one dram; Vitriol, two scruples; Rose-Vinegar, two ounces: Let them boil in a sufficient quantity of Red-Wine, to a pint and half, keep it for your use.

The Flux being stayed, we discuss the remaining with the following Decoction.

Take the Roots of Bistort, three drams; of Flowerdeluce, two drams; Leaves of Sage, Hyssope, of each half a handful; Galls, a dram: Frankinsence, Sandarach, of each two drams; Juniper-Berries, an ounce: Boil them in Red-Wine.

In a cold Distemperature, the Patient must avoid all cold potable Medicaments, yea the very Air it self, those Medicines that purge Phlegme profit, Bleeding hurt. The following Medicine, which is of great vertue may be held in the Mouth.

*My Spirit for the Tooth-ach.*

Take shavings of *Guaiacum*, four ounces; Seeds of Stavesacre, Pomgranate-rinds, Galls, White-Frankinsence, of each an ounce; Crude *Opium*, red flowers of Poppy, Camphore, White-Ginger, Cloves, Long-Pepper, of each half an ounce;  
Leaves

Leaves of Sage, Arsmart, Tobacco, Horsemint, of each one handfull; Roots of Henbane, Pellitory of Spain, Mandrake, Hounds-tongue, Nettles the less, of each an ounce and half: Let them infuse fourteen days in a sufficient quantity of Spirit of Wine, then distil it in *Balneo Mariae*.

A *sharp Humour* falling upon the *Teeth*, is cured almost in the same manner, as a hot Distemperature; but if those Remedies are not sufficient, the following Mixture is to be used in a Spoon, which is not only of great vertue in this, but in all the other kinds of Tooth-ach.

Take Water of Plantane, an ounce and half; of Roses, Mint, of each an ounce; Alexipharmick-water; half an ounce; Cinamon-water, two drams, Julep of Roses, or Syrup of red-Poppies, an ounce; *Laudanum Opiatum*, three grains: Mix them.

In *solution of continuity*, and *rottenness* of the *Teeth*, it's best to pull them out.

In the *breeding of Teeth* in Children, the pain may be mitigated, with fresh-Butter and Virgin-Honey, or with a Decoction of the Brains of a Hare or Coney in Ale; but in a long pain it is very convenient to cut the Gum, to give passage to the Tooth.

9. From the Blood and mixt Humours ariseth, the *Ophthalmia* sometimes true, sometimes spurious, sometimes seizing on one Tunicle of the Eye, sometimes on more; that which happens only in the great corner of the Eye, is call'd *Agylops*; the white of the Eye may be vexed with little bladders call'd *Phlyctene*, which being broak, there follows an Ulceration, except stay'd, corrupting the whole Eye.

But

But if this Ulcer seizeth only the Caruncle, and and that the *Punctum Lacrymale* afterwards grows Callous, it becomes a *Fistula Lacrimalis*. If these Diseases yield not to these Remedies proposed in our Chirurgery, others are to be made use of: *Pblethene* are soon removed by the following Powder.

Take White Sugar-Candy, prepared Tutty, of each half an ounce; red Coral prepared, Camphore, white-Vitriol, *Saccharum Saturni*, of each two scruples: Mix them, and make them into a Powder.

A beginning Ulcer of the Eye requires first mundifying, afterwards Consolidating Medicines.

*A Mundifying Medicament.*

Take Mirrhe, 15. grains; Aloes, six grains, Sugar-Candy, one dram; the yolk of one Egg, Goats-Milk, three ounces: Mix them.

*A Consolidating Medicament.*

Take Red Coral prepared, burnt-Harts-horn, Sarcocole, of each a scruple; Dragons-blood, half a scruple; burnt-Lead, a scruple; Starch, half a dram; *Crocus Metallorum*, half a scruple; Gum Tragaganth dissolved in Rose-water, a dram; Horle-tail-water, as much as sufficeth to make it into a Collirium.

If the *Punctum Lacrymale* in the great Glandule of the Eye be callous, and from the continual Flux of Humours, degenerates into a *Fistula*; first, the Collosity is to be removed, before the other accidents will cease, for which the following are used by us; the *Pblegm*, and *Spirit of Vitriol*, burnt

*Alom*

*Alom*, blew *Vitriol*, *Verdigreese*, *Mercury-water*, *Aqua Fortis*, *Unguentum Aegyptiacum*, but the best of all is, *Unguentum Fuscum* of *Felix Wurta*, boild to the consistence of a Suppository, and put into the *Fistula*.

The *Callosity* being taken away, the Ulcer may be cured by the following Medicine.

Take *Roots of Flowerdeluce*, round *Birchwort*, *Bark of Frankinsence*, of each a dram and half; *Mirrhe*, *Mastick*, *Sarcocols*, *Aloes*, *Cadmia fossilis*, of each a dram; *Honey*, as much is sufficient to make it into an Oyntment.

If the *Os Lacrymale*, or *Zygomaticum* be foul, the Skin being divided, an actual or potential Cautery must be applyed, that the *Caries* may be removed, otherwise it is impossible to cure the *Fistula*, that not taken away.

10. The pain of the Ears proceeds from a cold, or hot distemperature, or from a solution of continuity, which oftentimes an Ulcer follows; for a cold distemperature, and what accompanies it, the Wind, besides the common and particular Medicines, outwardly may be applyed this with very good success.

Take Oyl of *Rhue*, *Henbane*, of each half a dram; of distilled *Marjarom*, half a scruple; *Castor*, six grains; *Eastern-Saffron*, four grains: Mix them.

The Smoke of *Tobacco* blown through the bowl of a Pipe put into the Ear, hath done good to many for the pain of the Ears, and for deafness, oftentimes also a decoction of *Cloves* in *Red Wine*, hath profited, if too or three drops of it be infill'd warm into the Ear, and the Ear afterwards be stop't with a Clove.

Two drops of the following Spirit, Morning and Evening dropt into the Ear, is Excellent.

*My Spirit for the Ears.*

Take Ants-Eggs, N<sup>o</sup>. 100. Castor, Pulp of Colloquinda, Marjarom, Savin, Wormwood, Rhue, a handful; Seeds of Cummin, Anise, Fennel, Carraways, of each three drams; Bay-berrie husks pull'd off, Juniper-berries, of each half an ounce; Pomgranate-rinds, six drams; Roots of black-Hellibore, round-Cyprus, Radishes, Sow-bread, Middle siz'd, Onions, N<sup>o</sup>. vij. bitter-Almonds, two ounces: Infuse them 14 days in a sufficient quantity of rectified Spirit of Wine, then distil them in *Balneo Marie*.

In a *hot distemperature*, first we ought to divert the Flux of Humours by Bleeding, Purging, Scarifications, Glisters, &c. then the following Medicines by Cotton inbibed, we may put into the Mouth.

Take Womans-milk, two ounces; Whites of Eggs well beaten, half an ounce; Oriental Saffron, half a seuple; Goose-grease dissolved, two dram; *Crude Opium*, five grains: Mix them.

Or,

Take Oyl of Violets, sweet-Almonds, Rose-Vinegar, of each an ounce; *Phylonium*, *Romanum*, two drams; Eastern Saffron, half a scruple: boyl them, and strain them for your use.

Or,

Take Roots of Marshmallows, an ounce; leaves of Mallows, of Mandrake, of each one handful;  
Heads



Heads of Poppy, No. ij. flowers of Dill, Camomile, of each two handfuls; Linseeds, three drams; boyl them in Cows-Milk for a fomentation.

The Flux and pain being ceased, what yet remains, may be discussed by those Remedies, but now set down in a pain from a cold distemperature.

Where the inflammation *Apostumates*, which we understand by a Feaverish Pulse, and by the continual increasing, we must assist Nature by suppurating Medicines.

Take *Unguentum Basilicon*, two drams; Oyl of Linseed, three drams: Mix them.

Or,

Take Goose-grease, Oyl of sweet-Almonds, of white Lillies, of each two drams: Mix them.

Or,

Take Roots of White-Lillies, an ounce and half; a large Onion roasted in the Embers, and beaten together; add to them the Meal of Marshmallows, half an ounce; Linseed, six drams; fresh Butter, an ounce and half; Oyl of Camomile, and Linseed, of each half an ounce; Saffron, half a dram: Make it into a Pultise.

The Apostume being broke, the Ulcer is first to be Mundified, for which purpose are convenient, Honey of Roses, of Centaury, the juice of Smallage, Fennel, Bete, Onions, Leeks. Decoction of Agarick, Lupins, Urine, Lye; Oxes-gall, *Unguentum Aegyptiacum*.

Then must be used those Medicines that may dry and consolidate the Ulcer.

Take Roots of round-Birthworth, half a dram; of Flowerdeluce, a scruple; washed Ceruse, prepared

ured Turty, of each a dram; Mirrhe, Sarcocols, Litharge of Gold, of each two scruples; artificial Cinabar, half a dram; Scales of Iron, a scruple; Honey of Roses, as much as is sufficient: make it into an Oyntment.

Where Worms come in an Ulcer from an impure matter; the following are convenient to kill them.

The juice of Wormwood, Centaury, Arsmart; Decoction of Coloquintida, of white Hellebores, Ox-Gall, Oyl of Wormwood, of bitter Almonds, &c.

Or,

Take Aloes, Mirrhe, of each two drams; Coloquintida, half a dram; tops of Wormwood, half a handful: Boil them in White-Wine for an Injection.

11. The Nose as well as the Ear is subject to Inflammation, which presently in the beginning we are forced to remedy by the Medicaments formerly mentiond in an inflammation, lest otherwise its Cartilages should become carious, which may cause a great deformity.

Sometimes a Tumour call'd a Polypus seizeth the inward Cavity of it, occasioned from impure, and pituituous Blood; which is two-fold, for it either resembles a Tent or Pellet, and is call'd by the general name *Sarcoma*, or it spreads it self with many small branches into the inward parts of the Mouth, or into the External parts of the Nose, and is in *specie* call'd a *Polypus*; that which is of a whitish colour, not painful and soft, is easily cured; but that more difficultly, which is very red; never that which is livid, black, or stinking; being touched, it turns into a Cancer, and over-spreads the whole Face.

V

The

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V

The

The Cure of it is performed by Medicaments by a Thread, or by a Knife, in the beginning those Medicines that are dry and astringent are most convenient.

Take Pomgranate-Rinds, flowers of Balaustians, of each a dram; *Cadmia Fossilis*, two drams; Crude Antimony, *Crocus Martis*, of each half a dram; Massick, Mirrhe, Load-Stone, Litharge of each a dram: Make them into fine Powder.

These effecting nothing, Exedents are to be used.

Take burnt Alom, Bole-Armenick, Balaustians, of each three drams: Make them into a Powder.

*Another stronger.*

Take Vitriol, half an ounce; Alom, Pomgranate-rinds, Galls, of each two drams; red Mirrhe, burnt-Birthwort, of each a dram: Make them into a Powder.

*Another yet stronger.*

Take Vitriol, four ounces; Alom, Verdigreese, of each half an ounce; Vinegar, six ounces: Calcine them in a luted Vessel.

*Another, very effectual.*

Take red & yellow-Arsnick, Alom, Galls, of each half an ounce: Make them into fine Powder.

I have seen those Tumours totally eradicated, by the water wherein Mercury Sublimate is boiled.

But they seldom are cured by Medicine; for the most part we use here an Instrument described by *Sennertus*, and *Aquapendens*.

It may also be drawn forth with a pair of Forceps;



ops; they may also be removed by a thred (if it can be conveniently put about it) what remains may be cured by application of the Medicines but now mentioned.

12. The Mouth is inflamed upon many Causes, the chief are, 1. The heat of the Blood: 2. The Acrimony, and saltness of the Spittle: 3. A Rheum from the Head, generally there follows little Blisters, and an Ulceration, which not being carefully looked after, turns to a Gangrene, especially in Chudren after the small Pox and Measels; in this case, besides the common means, this is excellent:

Take *Felix Wurtz*, his brown Oyntment, two drams; Honey of Roses, an ounce and half; Spirit of Vitriol, half a scruple: Mix them.

13. Under the Tongue happens a *Ranula*, or *Batrachios*, a Tumour which is more frequently produced from Phelgm, than from any other part of the Blood; and it is often cured by this Powder.

Take Pepper, Ginger, of each a dram; *Sal Gemme*, and common Salt, of each two scruples; wild Marjerom, Calamint, Oris-rootes, Hermodactills, of each half a dram; Mastich, a scruple: Make it into a Powder.

Strew it often upon the Tumour; which if it goes not away, open it in one or more places, that the moisture may come forth, and apply Honey of Roses to the Wound; some in this case use an actual Cautery, but I rather approve of a Lancet.

14. For the Corruption of the Gums, this Powder is good:

Take Roots of Comfrey, Pomgrawate-rinds,

of each a dram ; Frankinsense, Mirrhe, white Vitriol, of each half a dram ; burnt-Vitriol, a scruple : Make it into a Powder.

15. *Epulis*, a Tumour of the Gums, must be suddenly taken away by a Thred or Knife, lest it should turn into a Cancer.

16. For the taking off an *Ulcerated* and rotten *Uvula*, *Bartholine* hath described an excellent Instrument in his *Anatomical Observations* ; but it may be conveniently enough cut off with a pair of Scissers, and the bleeding may be stopt with Cyprus Vitriol, *Unguentum Aegyptiacum*, or the like, is sufficient to perfect a Cure. *Fabritius Hildanus* judiciously took it away by the help of a Thred, which is to be imitated by them who fear an Incision.

## CHAP. II.

### Of the inward parts of the Head.

Now we approach *Pallas's* Tower, which is sometimes empty, and sometimes fill'd with Folly ; wherein if an ill mind, be, as it were, a familiar inhabitant, *Vertue* must prudently look to it self, but yet let it continue its Dominion, whilst its Enemy in the mean time lurking in some corner shall no where be at quiet.

Before we can enter into it, and look into the Brain, there are two Curtains to be drawn open, the *Pia*, and *Dura Mater*.

The *Dura Mater* in the outside rougher then in the inside, encompasseth the Brain very loosely, lest its

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Arbitrary Motion should be hindred, dividing the same by the help of certain foldings which is call'd *Falx*, into the right and left part, and also separating it from the *cerebellum*. In this *Falx* are always found four Cavities, sometimes seven, in which many of the branches of the Carotide Arteries are inserted, afterwards joyning with the Jugular Veins.

These Cavities have the use and substance of Veins, so that they may not improperly be reckoned among the Veins.

The *Pia Mater* is more sensible, and hath more Arteries than the *Dura*, which doth not only invest the whole Brains, but also enters the winding every where, which for this cause may more easily be separated.

We do divide the Brain into three parts, which are, 1. The Brain itself. 2. The Spinal Marrow. 3. The *Cerebellum*, or little Brain.

The Brain is of an Ashy colour, and of a softer substance than Marrow (which is both whiter and solider) whence also it was wont to be call'd Rind, it receives several branches from the Carotide Artery, and therefore destitute both of Nerves and Sence.

It hath divers *turnings* and *windings*, which fold in deeply, especially those in the forepart of the Head, where the great *Fissure* divides the Brain outwardly, even to the Marrow.

The Marrow is the Mother of all Nerves; within the Skull 'tis call'd the Marrow of the Brain, but without it is termed the Spinal Marrow.

The *Cerebellum*, or little Brain, is more of an Ash colour than White, receives Arteries from the Cervicalis and Carotide, yet there are fewer branches

branches here than in the Brain, as being much less.

It hath no windings, but is made up as it were of several thin plates lying one upon another.

These being thus considered, the Anatomist takes off some part of the Brain with a Knife, and forthwith the *Corpus Callosum*, and the *Fornix* joyning to it, come in view.

Under these laterally lye two great *Ventricles*, in Figure resembling a Horse-Hoof, which the *Septum Lucidum* distinguisheth into the *right* and *left*, or into the *first* and *second*.

In them is contained the *Rete Mirabile*, or *Plexus Choroides*, consisting of many little Glandules, composed from the branches of the temporal Artery, twisted together in form of a Net.

In the fore-part these Ventricles are united, and make a third.

In this third Ventricle are two Cavities, the first of them runs to the *Infundibulum*, and to the *Glandula Pituitaria*, the other to the fourth Ventricle contained in the *Cerebellum*; above this Ventricle, are observed four round Bodies, which are call'd *Testes* and *Nates*, to which joynes the *Glandula Pinealis*, which is falsely call'd by some the seat of the Soul: Of late the famous *Sylvius* hath demonstrated it not to reside in the Ventricles, but without them, by whom also 'tis esteemed but a Glandule; and that with more reason, because that both he and I have found in it not seldom two or three Stones, but sometimes four, which we yet keep by us.

The Bodies being removed, eight pair of Nerves appear, which we have already treated of, on the fore-part of whom joynes the *Rete Mirabile*

able of *Galen*, which is a complication of the cervical and carotide Arteries.

After these, the *Cerebellum* comes in view, like a double Globe, in the midst of which is the *Processus vermiciformis*, and *Pons Varolij*, under it lies the fourth Ventricle.

Last of all, the *Spinal Marrow* shews it self, divided in its beginning into two parts, not unlike a Writing-Pen, which descending down the back, imparts its branches over the whole Body.

*Chirurgical Consideration.*

1. In Wounds of the *Dura Mater*, two Symptoms render their Cure very troublesome, to wit a Flux of Blood, and extream pain: if the Skul be not sufficiently open, without any delay the Trepan is to be applyed on the part affected, and forthwith the extravasated and grumous Blood being discharged, let this Oyntment be applyed:

Take Manna of Frankinsence, two drams, Aloes, one dram; Mirrhe, a Dram and half; the softest Hares hair, half a scruple; white of an Egg, as much as sufficeth to make it into an Liment.

The Powder is also very useful, that is described in the Chapter of particular Wounds in the second Part of this Chirurgery.

To mitigate the pain, Oyl of Roses, Violets and Mertles used warm, as also the warm Blood of a Hen or Pigeon, &c. is very much commended.

The Flux of Blood, and the pain being ceased, the following Medicines are to be used, which are not to be left off, unless the matter begins to flow too plentifully.



Take Oyl of Turpentine, two ounces; Spirit of Wine, Syrup of Wormwood, of each an ounce: Mix them.

But if a Gangrene, or putrifaction should happen, the following Liniment is of great use.

Take Sarcocols, Mirrhe, Aloes, of each a dram; Syrup of Wormwood, Honey of Roses, of each two drams; *Ung. Ægyptiacum*, two drams and an half; *Aqua Vite*, an ounce and half; White-wine an ounce: Let them boil gently, then strain them.

Neither do I apprehend any danger is to be feared in the taking off part of this Membrane when putrified; so that you can come at it with a pair of Scissers, and that the Sinus, or *Pia Mater* be not hurt.

2. When the *Pia Mater* is likewise affected, the Chirurgeon must abstain from all Oyls, although they be drying, lest a corruption of the soft Brain be caused; Drying Cephalick Powders are very convenient to be used here. But seeing that these Wounds for the most part are Mortal, I shall say no more of them.

### CH A P. III.

#### Of the Neck.

THE Neck under the Scarf-skin, Skin, and fleshy Membrane, and the common and proper Membrane of the Muscles, hath of each side four Muscles.

Of these the *Longus* and *Scalenus* bend it:

*Transversalis*

*Transversalis*, and *Spinatus*, draw it back of each side.

It hath five *Veins*, *Cervicalis*, *Muscula Superior*, and *Inferiour*, *Carotis*, *Interna*, and *Externa*.

And as many *Arteries*, *Cervicalis*, *Muscula Superior*, & *Inferior*, *Carotis*, *Interna*, & *Externa*.

It hath Nerves from the *Par Vagus*, and the Spinal Marrow.

In the fore part of it are are many *Glandules*, which are greater in Women than in Men.

Under these the *Larinx* the Organ of the sound lyts composed of five Cartilages, which are

1. *Thyroides*, or Buckler-like.
2. *Cricoides*, or Annular.
3. *Arytenoides*.
4. *Glossis*.
5. *Epiglottis*.

It is moved by six pare of Nerves, which are

1. *Hyothyroides*, the pare that lift up the *Larinx*.
2. *Bronchij*, the pare that pull it down.
3. *Cricothyroides antici*, the pare that dilate.
4. *Cricothyroides laterales*, pursing it together,
5. *Thyro-arytenoides*, that open it,
6. *Arytenoides*, sphinters that close it.

After these the *Almonds*, or *Paristomia* by (some call'd *Tonsils*) offer themselves; then the *Pharynx*, to which appertain seven Muscles, by whose assistance the Meat and Drink are swallowed,

1, 2. *Sphenopharyngaei*, which raise up the *Pharynx*.

3, 4. *Cephalopharyngaei*, moving it inward.

5, 6. *Stylopharyngaei*, dilating it.

7. *Constrictor*, or *Sphincter*, which closeth the Gullet.

The back part of the Neck hath seven *Vertebrae*,

braes, the processes of some, of which are perforated to give passage to the Vessels that carry the Blood into the Brain.

### Chirurgical Considerations.

1. We have already sufficiently treated of the Cure of *Scrophula's*, or the *Kings Evil*; I will only give you here the Oyl of *Langius*, whose Vertues are very Excellent, not only in the *Kings Evil*, but also in Malignant and fordid Ulcers, if it be carefully used.

Take Oyl of Phylosophers, or Brick, half a pound; Frankinsence, Mastick, Gum Arabick, Turpentine, of each three drams; pound them together, & distil them in an Alembick, then add to the distillation Salt of Holm-Oake, two drams; and distill it again, and reserve the distillation in a Glasse for use.

In the room of the Salt of Holm-Oak, which grows not in *Holland*, *Sal Gemma* may serve in stead of it.

2. In a *Hernia gutturis*, or *Brouchocele*, seldom Medicaments affect any thing, when for the most part the cause of the Disease (to wit preternatural Phlegm mixt with Wind) is contained in a peculiar Bladder, and the Tumour lyes under the Muscles, having its Original not from the Glandules, but from the *Aspera Arteria*, or Wind-pipe; yet in the beginning, the following do good.

Take Roots of *Ireos*, Galangal, of each a dram & half; Penceroyal, Savory, Rupturewort, of each a dram; Seeds of Fennel, Anise, of each a dram; Parsly-seeds, half a dram; Long-Pepper, Spikenard, Nutmegs, Cinamon, of each two drams; Mirrhe,

Mirre, half a dram ; Burnt-Alom, half an ounce ; White-Sugar, three ounces : Make it into a fine Powder.

Let the Patient take of this Powder each Morning a dram and half in White-wine.

Take Gum *Ammoniacum*, *Galbanum*, *Edellium*, dissolved in Vinegar, of each an ounce ; Powder of Orise-roots, two drams ; Mustard, and Nettle-seeds, of each a dram ; Pulp of *Coloquintida*, Orient Saffron, of each a scruple ; *Sal. Gemma*, Alom, of each a dram ; Naval-Pitch, six drams ; Rosin of the Pine, an ounce : make it into a Plaister.

These Medicines effecting nothing, after this manner the Tumor may be taken away. First, take up the Skin, and divide it longways, then it being separate of each side to the bottom, from the Tumour, take out the Bladder, whole, if possible, for if any part of it be left behind, the little Arterie which brings nourishment to the Tumour, must be divided, lest it increase anew. Then let the part affected be washed with Vinegar wherein a little Salt and Niter hath been dissolved, for the Flux of Blood is not in this case at all considerable : Lastly, bring the Lips of the Wound together with a stitching Plaister, it being not necessary to use a Needle here.

Of the *Angina* and *luxation* of the *Vertebrae* of the Neck we have spoken of in their places.

*The end of the second Book of the third Part.*



# The third Book.

## Of the *Thorax* or *Breast*.

### CHAP. I.

#### *Of the External parts of the Breast.*



The middle Region of the Body, whose upper-part is call'd the *Shoulders*, fore-part the *Breast*, hinder-part, the *Back*; under, proper, and common *Tegments*, hath proper and common Muscles.

The common are those of the *lower Belly*, and *Scapula's*, those we have shewn already; these are four,

1. *Serratus Amicus minor*, which brings the *Scapula* forward.
2. *Trapezius*, or *Cucullaris*, which moves it upward, and obliquely backward.
3. *Rhomboides*, which moves it obliquely downwards.
4. *Levator*.

The proper Muscles of the *Thorax* are twelve.

1. *Subclavius*, or *Extensor*.
2. *Serratus anticus major*, which is the inferior raising up the *Ribs*.
3. *Ser*



3. *Serratus posticus Superior*, or the superiour raiser up of the Ribs.

4. *Serratus posticus inferior*, or the depressor of the Ribs.

5. *Sacrolumbus*, which draws the Breast together.

6. *Triangularis*, which likewise draws the Breast together.

Under these Muscles lye the *Duggs* in both Sexes abounding with quantity of *Fat*, and in the Female with many Glandules.

The *Back* and *Loins* ( whose Muscles in this place we are forced to describe ) have four pare of Muscles.

1. *Quadratus*, or the flexour of the Vertebra's.

2. *Longissimus*, or first extender of the Vertebra's.

3. *Sacrum*, or the second extender.

4. *Semispinatum*, or the raiser up of the Back.

After the Muscles, follow the Collar-bones, the Shoulder-blades, the Breast-bone, the Ribs, and the Vertebra's; of the Veins, Arteries, and Nerves we have formerly treated.

The *Clavicles*, or *Collar-bones*, being spungy bones, are joyned to the upper Process of the Shoulder-blade, by strong Ligaments, and movable Cartilages.

The *Scapula*, or *Shoulder-blade* is a broad and thin Bone, lying upon the outside of the Ribs, furnished with two Ligaments, three processes, and five appendices.

The *Sternum*, or *Breast-bone* being distinguished in Infants, by seven or eight lines, and by three or four in old people, is very spungy, and hath in its

its lower part a Cartilage, call'd *Cartilago ensiformis*, or *Mucronata*.

The Ribs, in each Sex are twelve; the seven *uppermost*, which are the true, are joyned with a double Tubercle to the Vertebra's, but with a Cartilage to the *Sternum*, are hard and round; the five *lowermost* which are the Bastard Ribs are lesser, softer, and shorter, having Cartilages about the *Osses sternum*, but not touching it.

Between these Ribs, on each side, are *Muscles* found, which are call'd *Intercostals*, eleven within, and as many without, so that in all there are forty four, the Fibres here are placed cross wise.

In the Cavity of each Rib, formed in the lower part of it, resides, a Vein, Artery, and Nerve, which extend themselves into the middle of the forefaid Muscles.

The *Vertebra's* of the *Back* are for the most part accounted twelve, and have nothing considerable.

### Chirurgical Considerations.

I omit here divers operations, having already treated largely enough of them before.

What now offers it self, is a *Fistula* of the *Breast*, of a more difficult Cure in that, than in any other part, by reason of the continual motion of the Muscles; therefore 'tis highly necessary to distinguish these *Fistula's*; for the oblique do very hardly admit of any Cure: Those that perforate the Breast are not easily made whole again; those that have their rise from between the *Pleura*, and the Muscles, the matter falls down; whence it comes to pass that afterwards it's difficultly discharged; therefore in this case there necessarily is a  
short

short breathing, and a slower motion of the Breast: The *Callous* is to be removed by the same Remedies we have set down in the Chap. of *Fistula's*, and so sometimes the *Pleura*, and the flesh of the Muscles unite again; but if these effect nothing, let the Chirurgeon put a little crooked *Silver-pipe* into the *Fistula*, so that the end of it may touch the bottom, through which let him pass a Needle threaded with Silk, answering to the crookedness of the Pipe, which being done, let him with the Needle perforate the Skin, then the Needle being drawn through, let both ends of the Thred be tyed together, and the Thred every day be anointed with some *Exedent* Medicines; and the Callosity being taken away, let the Ulcer be *skinned*. The Instruments which are used in this case, are described in the Tab. 38. Figure 5. of *Sculptur*, of the old Edition.

The Breasts of Women often in those that give suck, from the great quantity of Milk, Wax, *Hard* and painful, and by the *Dutch* is call'd *Drop*, which affect may be cured in one days space, with compound Oyntment of Marshmallows, the watry matter being suckt out by a Woman, or Whelp: but this discharge being neglected, or delay'd, every day the Breast growes harder and harder, nay becomes *inflamed*; then *Bleeding*, *Purging*, *Sweating* is requisite: outwardly this Cataplasim may be applyed;

Take meal of Marshmallows, of *Fœnugreek*, of each an ounce; Flowers of *Elders*, *Camomile*, of each a handful; red-Roses, two pugils, crums of course-Bread, an ounce an halt: Boil them in Ale, adding to them of *Rose-Vinegar*, an ounce: Make a Cataplasim.

The

The Flux of Humours and Pain being ceased, the remaining may be discussed by the following Cataplasim.

Take meal of Beans, of Linseed, and Fennugreek-seed, of each an ounce; Cummin-seed, three drams; boil them in Wine, adding to it compound Oyntment of Marshmallows; Oyl of Camomile, of each half an ounce: Make it into a Cataplasim.

When it begins to Apostumate, *Maturatives* are to be used.

Take leaves of Mallows, Marshmallows, of each a handful; Powder of Linseed, an ounce; of Fennugreek-seed, an ounce and half; Leaven, half an ounce; boil them in Milk, adding to them *Unguentum Basilicon*, an ounce; Saffron, a scruple: Make it into a Cataplasim.

The Tumour being suppurated, must be opened with a Caustick, or what is better, with a Lancet, and put a Tent into it, dipt in common Balsom of Brimstone until the end of the Cure; laying upon the Breast *Emplastrum Diasulphuris Rolandi*.

3. A *Gibbosity* ariseth from the spine of the Back, when the Vertebra's are removed outwardly, or of one side, from their natural place: which is occasioned sometimes by an External Cause, some by an Internal, especially when some pituitous Humour is collected about them; this *Humour* must be taken away by discussive Oyls and Plaisters, before that which is started out, can by a Steel compress, fitted to the body of the Patient, be reduced: This reduction is not so much performed by the Compress, as it is by the Emollient quality of the Iron: For this reason, it is necessary that

that the Patient, though cured, for a year or more  
after, use another Bandage, that the soft Bones may  
not again start out.

It is here likewise to be observed, that in the  
middle of the Back, about the seventh Vertebra,  
with great success may an Issue be made, to in-  
tercept Rhumes flowing to the Hip, Kidneys,  
Stomach, &c.

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## CHAP. II.

### *Of the Internal parts of the Thorax.*

THE *Breast* now comes to be opened, that we  
may view the Fountain of Life, which the  
Celestial Truth affirms to consist in the Blood; for  
what reason is it therefore that the Soveraign San-  
guification is not attributed to the Heart, where  
every where, and by all, it is call'd the Original  
of Life.

Within, the Breast is invested by the *Pleura*,  
which is afterward doubled, and at length qua-  
drupled, extending it self from the Vertebra's to  
the *Sternum*, and then it is call'd *Mediastinum*,  
dividing the Lungs and Thorax.

Near to the Throat there adheres to the *Medi-*  
*astinum*, a Glandulous Body called *Thymus*.

The Lungs drawing in the Air, and so cool-  
ing the Heart, is furnished to this purpose with a  
*Trachea, Aspera Arteria*, or Wind-pipe; this lies  
upon the Gullet, and consists of Cartilaginous  
Rings, and a double Membrane.

The outermost of these Membranes which is  
the



the thinner, ariseth from the *Pleura*; the innermost, which is the thicker, from the *Dura Mater*.

The annulary Cartilages are joyned together with Ligaments, and make not a perfect Circle, as being destitute of a fourth part that lyes upon the Gullet.

This Wind-pipe distributes *branches* through the whole Lungs, which are strong enough, but not at all Cartilaginous.

The Lungs themselves covered with a thin porous *Tunicle*, consist of a soft, red, spongy substance.

In the fore-part they adhere to the Sternum, in the back-part to the Vertebra's, filling the greatest part of the Breast.

It hath seven lesser *Vessels*, of which we shall speak of in their places.

The Heart, the Work-house of the Blood, the Fountain and Original of life, the sacred Writ itself also. witnessing it, is included in a certain Case, call'd by Anatomists, *Pericardium*: It consists of two Membranes, the outermost comes from the *Mediastinum*, the innermost from the Vessels of the Heart; it contains a clear watry Liquor, void of all Acrimony, which we no longer doubt of to be brought from the Ductus's of the Limpha.

The Heart it self consists of a fleshy, serene, and hard substance, which is invested with a proper *Tunicle*, furnished with *Fibres* of all sorts, and like a Muscle, is continually moved.

It is placed in the middle of the Breast, but the point of it inclines sometimes to the left-side.

In Figure it is like to a *Pine-Apple*, having in

its upper part two Auricles, or little Ears, which always beat, before the Heart it self.

In old people, the right Auricle is bigger than the left, which in Infants is the contrary: in the throwing forth of the Blood, the Auricles as well as the Heart it self are purst together, are dilated as often as they take in the Blood; and this Constriction and Dilation makes the Pulse.

For the concoction, reception, and throwing forth of the Blood, it hath two Cavities, and four Vessels.

The Cavities are distinguished by a fleshy Division, in which I could not yet find any way appointed for the motion of the Blood out of the right Ventricle into the left, although many Anatomists do certainly affirm it.

These Cavities are divided into the right and left; the right, which is the greater, receives the *Vena Cava*, and *Arteria pulmonalis*, or *Vena Arteriosa*; the left, which is the least, receives the *Arteria aorta*, or great Artery, and *Vena pulmonalis*, or *Arteria venosa*.

Of these Vessels, as also of the Nerves, and Chylous passages, or the Thoracick lacteal Veins, we have treated of in the first Book.

Under the Wind-Pipe in the Cavity of the Breast, lyes the *Oesophagus*, or Gullet, resting upon the Vertebra's.

About the fifth Vertebra of the Back, it inclines a little to the right-side, that it may give way to the *Arteria aorta*, unto the eleventh Vertebra; thence with a straight *Ductus* it passeth the *Diaphragm* into the lower Belly.

It consists of a double Membrane; the outermost

is fleshy, having streight and round Fibres, the innermost transverse and oblique: Many add to these a third, and rightly in my opinion.

The Diaphragm, in nature of a Fan, serving to respiration, divides the Thorax from the Abdomen, and adheres to all the Bastard Ribs, to the Cartilage of the Breast-bone about the Vertebra's, sending two fleshy Processes to the lower parts.

Its edges round about are fleshy, variously movable like a Muscle, but its center membranous, and very sensible.

It hath three perforations; 1. In the middle of it, through which the *Vena Cava* passeth. 2. In the left-side, through it the Gullet, with the adjacent Nerves. 3. About the Vertebra's, through which the *Arteria aorta*, with the *Vena azygos*.

It receives more Nerves than any other part of the Body from the Collar-bones to the Feet, which arise not only out of the Brain, from the *Par vagum*, but also from the Spinal Marrow, and from the fifth and sixth Vertebra of the Neck. Of the other Vessels we have already treated.

### *Chirurgical Considerations.*

The *Pleura* is not only subject to Inflammation, upon which follows a Pleurisie, an Empiema, and Imposturation; but also a certain pain, which a salt Humour produceth: This may be distinguished from a Pleurisie, because here is a dry Cough, yet no Fever, also free breathing enough. I am used to remove this by Bleeding, and Sweating, and if you fear a Pleurisie, apply outwardly this Plaster.

Take Marrow out of an Oxes-bone, Ducks-grease, of each three ounces; the Mufflage of Marsh-

Marshmallows, Linseed, Fenugreek-seed, of each an ounce; Frankinsence, Mastick, of each half an ounce; Oyl of *Nacista* exprest, two drams; yellow Wax, as much as sufficeth to make it into a Plaster.

2. *Mediastinum*, hath not so great a Cavity in man, as in Doggs and other Creatures; yet it happens sometimes that a purulent matter descends between the two Membranes of it, which can by means be evacuated by the Lungs; therefore we are forced to perforate the *Sternum* with a Trappan, that so through the made Orifice, by the use of Tents, Spunges, and other Instruments, the matter may be discharged.

3. In that kind of *Quinsy*, which we above call *Cynanebe*, where the Patient is almost suffocated, we remedy by *Laringotomia*, or opening the Wind-pipe; the Disease it self is far more dangerous than this operation; therefore it would be well if it was oftner practised; nevertheless there is required a diligent consideration, that the other parts, to wit the *Lungs*, *Pleura*, *Gullet*, &c. be not also inflamed, or already full of matter, which may frustrate your labour, and afford cause of scandal; but every thing being well weighed, the operation is to be performed in this manner; Let the Head be a little bent backwards, that the Wind-pipe may the more plainly appear, and the annulary Cartilages recede the further the one from the other; then divide the skin according to the length of the Larinx unto the hollow, and let a stander-by with his Fingers pluck open the skin of each side, that the Chirurgion may see the two long Muscles; *Sterno hyoidei*, which he must remove a little asun-

der either with a Knife of Wood, or Bone then the Larinx appearing, he must make his Incision with a Lancet, in the middle between the third and fourth annulary Cartilage, taking great care that he hurt not the Cartilages themselves: upon the breaths coming forth, take out the Knife, and put a Silver Pipe into the Wound, which must not be so long as to reach the hinder-part of the Wind-pipe, lest it cause a continual Cough; the danger of suffocation being over, which for the most part happens to be about the third or fourth day, or at least ought then to be, the Pipe must be taken forth, and the Wound is to be cured in the ordinary manner according to Art, from which it differs not.

4. 'Tis no new thing for *Worms* to generate in the *Pericardium*, which except kill'd, corrode the very Heart it self. They may be destroyed with a decoction of *Scordium*, *Wormwood*, *Century*, &c. drunk twice or thrice a day.

Concerning the *Wounds* of the *Lungs*, *Heart*, and *Diaphragm*, see our *Chirurgery*. A *Wound* of the *Gullet*, is cured after the same manner as that of the *Stomach*.

*The end of the third Book of the third Part.*

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## The fourth Book. Of the lower Belly.

### CHAP. I.

#### Of the outward parts of this Belly.



THE lower Cavity, is properly call'd the *Belly*, is divided into three parts; of which

1. Is the *Epigastrium* each side of which is call'd *Hypochondria*.

2. The *Region* of the *Navel*, whose sides are call'd *Ilium*.

3. *Hypogastrium*, the sides of which are the *Groins*.

The lower hairy part is call'd *Pubes*.

The *Abdomen* under common *Teguments*, hath ten *Muscles*, of each side five, very necessary for the exclusion of the grosser *Excrements* contained in the *Guts*, they are these.

1. *Obliquely descending*, which in the upper part the *Navel*; In the lower in *Man*, the process of the *Peritonaeum*; In *Woman*, the long *Legaments* of the *Womb* perforates.

2. The *Oblique ascending*.

X 4

3: The

3. The *Recti*, or straight.
4. The *Pyramidal*.
5. The *Transverse*.

In the middle of the Abdomen, between the two straight Muscles, ariseth the *Linea Alba*, or White-line, from the meeting of the broad Tendons of the other thin Muscles, which is very sensible.

Of the *Veins*, *Arteries*, and *Nerves*, both of the outward, and inward parts of the lower Belly, we have already treated of in the first Book, as likewise something of the *Bones*. But the more curious Examiner meets withall, first, five *Vertebra's* of the *Loin*s, which are very full of holes, and greater, and thicker than all the rest.

Next to them follows the *Os Sacrum*, which is triangular; in old people being only of one Bone, but in young consisting of five or six.

To this is joyned the *Os Coccygis*, bent in Women more outward, in Men more inward.

On the sides of the *Os Sacrum*, is the *Os Ilium*, or *Coxa*, consisting of three Bones joyned together with a Cartilage. Of these,

1. Is the *Os Ilium*, much thicker in Women than in Men.
2. *Os Pubis*, more easily separable in the forepart in Women, than in Men.
3. *Os Ischion*, or *Coxa*, furnished with a large Cavity, which is call'd *Acetabulum*, or *Pixia*, appointed to receive the head of the Thigh Bone.

#### *Chirurgical Consideration.*

The outward Division of the lower Belly, plainly declares what Internal parts may be affected: In the right *Hypochondrium*, the Liver is situated

situated, extending it self beyond the bastard Ribs two fingers breadth, to the Swordlike Cartilage of the *Sternum*.

In the middle lyes the *Stomack*, extending it self to the softer parts of this Belly, so that it reacheth four fingers breadth beyond the Bastard Ribs; Beyond the soft places near to the Kidneys lies the *Spleen*.

In the middle of the *Umbilical Region*, and about it, lyes the *small Gut*, which being wounded, is most dangerous.

In the *right-side*, about the Kidney, the Gut *Colon* takes its rise, transversely running between the *Stomach* and Navel to the left Kidney, where winding downwards, and becoming narrower, is the frequent receptacle of Wind, and whence long pain, and great tension, which is undeservingly attributed to the *Spleen*: on the other side, the *Intestine* rests upon the *Mesentery*, as doth the *Stomach* upon the *Pancreas*.

In the middle of the *Hypogastrium*, are the *Bladder*, and *Womb* placed, and under them the *Intestinum rectum*.

On the *Side* lye the *Spermatick Vessels*, and the *Glandules*, in which both benign and malignant *Buboes* are produced.

But all these parts cannot be wounded, except the *Peritonaeum*, and *Omentum* be first wounded; yet in many men the *Omentum* descends not below the Navel; and contrarywise in others, it reacheth to the *Os pubis* it self.

## CHAP. II.

*Of the Internal parts of the Abdomen.*

**T**He first of the Internal parts is the *Peritoneum*, comprehending all the others, before and behind, above and below.

It is a double Membrane, its rise is rather deduced from the membranous quality of the Soul, than from the Meninges of the Brain.

It is joyned to the Diaphragm, and to the first and third Vertebra of the Bones.

It is thicker in Women from the Navel to the Privy Parts, and therefore stronger, terminating about the *Os pubis*.

In Men it is thicker from the Navel to the Diaphragm, and after it hath received the *Spermatick Vessels*, as in a sheath, it sends them through the outer Membrane to the Testicles, where it constitutes their first Coat. Between the foldings of this *Peritoneum* lye four *Umbilical Vessels*.

1. The *Umbilical Vein*.

2, 3. The two *Umbilical Arteries*.

4. *Urachus*, coming from the Navel, which is nothing else but an indurated knot of the aforesaid Vessels.

In Infants these Vessels are open; in old people altogether closed, and turned into Ligaments: Yet I could never by any means observe in Abortives of six, seven, or eight moneths, the *Urachus* Pervious into the Bladder; for neither Probe or Wind would pass.

The

The Umbilical Vein goes to the Liver, the *Vr-*  
chus to the Bladder, both the Umbilical Arteries  
to the Illiack branches of the great Artery.

The *Omentum* or *Caul*, keeping the Stomach,  
and Intestines warm, is very fat, and double; yet  
it consists of very thin *Coats*, which are perfor-  
ated with many little holes.

It takes its rise from the *Peritoneum*, under  
which it also lies, for the most part extending it  
self as far as the Gut *Colon*, and sometimes as far as  
to the *Os pubis*.

The *Stomach*, the Workhouse of the Chile, is  
composed of three *Tunics*: the outwardmost is  
common from the *Peritoneum*; the innermost  
from the *Dura Meninx*, the middlemost is pro-  
per to it self: the first is the thickest, the middle-  
most fleshy, and the innermost rinkled.

It hath Fibres of all sorts, inwardly crusted  
over with spongy flesh.

It is situated in the middle of the *Hypogastri-*  
um, resting upon the Vertebra's of the Loins; its  
left Orifice is call'd *Os*, or *Stomachus*, its right Ori-  
fice *Pylorus*.

The *Guts* are joyned to the Stomach, which  
convey the Chile, and expel the Excrements;  
they are almost of the same substance with the Sto-  
mach, and are all divided very well into the  
thick and thin.

The thin Guts are,

1. The *Duodenum*, in which the *Vesica Fellea*,  
with the *Ductus Choledochus*, and the new *Ductus*  
*Pancreaticus* are inserted.
2. *Jejunum*, in which are more Lacteal Veins  
than in any of the rest.
3. *Ileon*, which is the longest of all.

The



The thick Guts are,

1. *Cæcum*, with its worm-like appendix.
2. *Colon*, with two outward Ligaments, and one internal *Valve*.
3. *Rectum*, with the two Muscles, *Ani levatores*, and with one Splinter all these Guts are joyned together by the help of the Mesentery, and also to the Vertebra's of the Loins.

The *Mesentery* consists of a double strong Membrane, with many Glandules between each Membrane, which are so very small, that they can scarce be perceived by the Eye, but in sickly people; except three, which are naturally great, long, white, and hard.

The greatest of them is seated in the midst of the Mesentery, which being prest, yields Milky juice, sometimes thicker, otherwhile thinner, which is nothing but Chile, as likewise do the other two, which for the most part are in the left side under the Emulgent Vein, above the Muscle *Psoas*, not far from the Vertebra's of the Loins,

As these Glandules receive many Lactal Veins, so each of them again produceth a branch, which forthwith being joyned together, make the *Thoracic Lactal Vein*, which ascending, as hath already been declared, carries the Chile to the Heart.

The *Pancreas*, or Sweet-bread, lyes under the Stomach like a Pillow, joyned to the Gut *Duodenum*, into the which the late invented passage from the Authour call'd *Ductus Wirsungianus*, penetrates; in this is often Choler found, but never Blood.

The *Spleen*, which perfects the Blood, contains

an Acid Humour, which it sends not to the Stomach by the *Vasa brevia*, but to the Liver by the *Ramus Splenicus*.

It consists of a rare substance, covered with a proper Tunicle, not proceeding from the *Peritonaeum*.

It is of a darkish red colour.

It joyns to the bottom of the Stomach, by the means of the short Vessels, and to the Bastard Ribs, and left Kidney, to the Caul and *Peritonaeum*, and to the fleshy part of the Diaphragm, by the assistance of Carnous Fibres.

There is no Bowel abounds with so many Arteries as the Spleen, except the Brain.

The Nerves, which it receives from our seventh pair, are distributed through its Tunicle, rather than through its Parenchyma.

It is not placed in the fore, but back-part of the left side, near the left kidney, lying upon the Bastard Ribs, and Vertebra's, which is to be well observed.

The Liver, the Instrument of Blood, Mother of the great Veins, is situate in the right *Hypochondrium*, and covers a great part of the Stomack.

It is divided (as it were) into two parts, by the Umbilical Vein, which after-birth serves it for a Ligament.

It is a great, thick, and hard Body, of a red colour.

It is fastened to the Diaphragm by two Ligaments from the *Peritonaeum*, and to the Muscles of the Abdomen by the Umbilical Vein.

Some few Arteries it receives from *Celiaca*, and several Nerves from the Spinal Marrow, and from our seventh pair.

In

In the right-side of it, underneath, is inserted the *Vesicula Fellea* or Gall, with the *Pancreas biliaris*; the branches of both, together with the branches of the *Vena porta*, are comprehended in a certain common Bladder, call'd by *Glisson*, *Capsula*, these branches of the *Vesicula Fellea*, and *Ductus Cholydochus*, or *Biliaris*, being detained in the Liver, are dispersed through its whole Parenchyma, every where included in the above named *Capsula*; which is red, about the thickness of an Artery, taking its Original as it appears, from the *Peritoneum*.

The External branches being joyned, perforate the Gut *Duodenum*, taking two little Arteries from the *Celiaca*, and Veins from the *Vena porta*, call'd *Gemella*, together with the Bladder itself.

The *Kidneys*, which cleanse the Blood, consist of a peculiar hard flesh, invested with a proper Tunicle.

Outwardly they are encompassed with Fat, and with a large, loose Coat from the *Peritoneum*.

They lye upon the Muscles of the Loyns (yet the left is higher than the right) within the folding of the *Peritoneum*.

And above the *Kidneys* are two hollowed Glandules, call'd *Renes succenturiati*, or *Capsulae tribiliae*; these are furnished with branches from the Emulgent Veins and Arteries, and with Nerves from the *Parasymphum*.

The *Kidney* being opened, appear the nine *Craniculae papillares*, through which the Serum distils into the *Pelvis*, to be carried through the Ureters into the Bladder.

The Ureter, or the Urinary passage, whist within the Kidneys themselves, is very large, but when come from them, is very narrow; it is furnished all along with two Coats, the innermost is proper, the outer common from the *Peritonæum*.

Within the duplicature of the *Peritonæum*, it descends downward upon the Muscles of the Loins to the Bladder, into whose Neck it is inserted; then it ascends upwards between the Membranes, where it perforates the innermost Coat; and through the same hole, together with the Ureter of the other side, enters the Bladder, which is so very little, and so straitly closed, that there need not here any *Valve* to hinder the return back again of the Urine.

*Vesica urinaria*, or Bladder, consists likewise of two *Membranes*; the External is thick and fleshy, the innermost not.

It is seated between the Duplicature of the *Peritonæum*, in the Cavity of the *Hypogastrium*, which is commonly call'd *Pelvis*.

In Women it is joyned before by its Neck to the *Vagina uteri*.

The neck of the Bladder is very fleshy, and by the assistance of the Fibra's, like a *Sphincter* it opens and closeth the Bladders; in Men it is longer, narrower, and more crooked; in Women shorter, wider, and straighter.

The *Vessels* that bring Blood to the Bladder, are the branches of the *Hypogastrick Vessels*; it receives many *Nerves* from the seventh pair, and from the *Os Sacrum*.

The *Spermatick Vessels* yet remain, which wonderfully vary according to the diversity of the  
Sex.

### 320 Of the Internal parts of the Abdomen.

In Men the *Spermatick Veins* and *Arteries* first appear, of each side one, which serve for the bringing of the Blood to the Testicles for its preparation.

a The right *Spermatick Vein* comes from the descending Trunk of the *Vena cava*, the left from the left *Emulgent*, and both the *Arteries* from the great Artery.

These four Vessels being very crooked, and covered by the *Ureters*, pass to the Testicles; but before they come to them, near, and in the process of the *Peritonæum* are united by several anastomoses, and joining themselves with the Nerves, make one Body, which is call'd *Pampiniforme*.

The Testicle, or Stones themselves, the Organs of Seed, have each a Muscle, call'd *Cremaster*, they have two common *Tunics*, and three proper.

The common are,

1. That wrinkled purse, which is call'd *Scrotum*, to wit the Skin, which is thinner and softer than in other parts.

2. *Dartos*, to wit the *Carnosa Membrana*, which hath many Vessels.

The proper are,

1. *Elytroides*, arising from the process of the *Peritonæum*.

2. *Erytroides*, from the Muscle *Cremaster*.

3. *Albuginea*, from the *Spermatick* Vessels.

The substance of the Testicles is white, soft, thin, something like to the Glandules.

Upon them with a transverse situation lyes the *Corpus vermiforme*, which sensibly becoming narrower, constitutes the *Vas ejaculatorium*, which is *Epididymis*, or *Parastata*.



*Vas ejaculatorium*, is white, and hollow, like to the Ureters, which carries the Seed about the neck of the Bladder into the *Vesicula seminales*, where it is kept till a convenient time.

Proceeding a little further, before, you shall find two great Glandules, in which an Oyly Liquor is contained, to mitigate the acrimony of the Urine, these are call'd *Prostate*.

At last comes the *Penis*, or *Yard*, appointed for the evacuating of the Seed and Urine.

Its substance is peculiar to it self, the like being not in the whole body.

It hath no *Scar-skin*, and is destitute of *fat*, even in the most fat Bodies.

It is covered with a loose Skin, which is double, and makes the *Preputium*, and covers the *Glans*, to which it is tyed by the means of the *Frenum*, or *Bridle*.

Under the Skin and the fleshy Membrane, lye the Vessels above described.

Near to these are the four Muscles, which are the two *Erectores*; and the two *Ejaculatores*, under the Muscles are two *Nervous Bodies*, which make the greatest part of the *Yard*.

By their fungousness, rendring it either stiff or flacid. In the lowest part of the *Penis* appears

The *Urethra*, or passage for the Urine, consisting of two Coats, the innermost is very thin and sensible, the outermost thick and fleshy.

In Women, the Spermatick parts in this, differ from Mens, that they are shorter, and less, and by a wreathing and winding approach the Testicles; likewise they communicate several branches to the Uterine Tubes, and to the Womb it self.

The softer *Stones* are placed on the sides of the Womb, qualified to elaborate the Seed; they are covered with only one *Coat*, and that is proper.

They have no *Parastats*. The Testicles inwardly are full of little Bladders, which both contain the Seed, and by means of the Tubes convey it to the Womb.

These Tubes joyn to the Womb of each side, and to the Testicles but only of one side.

These have a *Cavity* consisting of a double Coat, which also contains some little Bladders, in which many will have the Seed to be further perfected.

The *Womb*, the receptacle both of the Seed and Child, is situate in the middle of the *Hypogastrium*, call'd *Pelvis*, between the straight Gut, and the Bladder.

It hath two strong and thick *Coats*, the first, which comes from the *Peritonæum*, the other is proper, and between both, many fleshy Fibres.

It is conveniently divided into the *Fundus* or *Bottom*, the *Orifice*, and the *Neck*.

The *Fundus*, the *Globose* part of the Womb, hath four *Ligaments*; the two uppermost are broad and membranous, which are joyned to the *Os Illium*; the two lowermost are red and round, and pervious to the *Clitoris*, thence like a Goose-foot, destitute altogether of their hollowness, they spread themselves upon the fore-part of the Thigh.

The *Orifice* of the *Womb*, which at one time can very straightly close it self together, yet at another is very dilatable, hath in its lower part a *Tubercle*, or knetty substance, as also many little holes.

The *Cervix*, or *neck* of the *Womb*, appointed to

receive the *Penis*, is very much wrinkled within, and almost eight inches long. To the Dissector comes first in view, the *Meatus Urinarius*, or the passage for the Urine, which is short and straight, then in this Cavity is the *Clitoris* seated, which is something in softness or hardness, resembling to a Mans Yard.

To this joyns the *Hymen*, perforated in the midst for the passage of the Urine and Courses; to which joyn four *Caruncles*, call'd *Myrtiformes*, then follows the *Alæ*, *Nymphæ*, or wings, which defend it, and the *hairy Lips*.

### Chirurgical Considerations.

1. The *Coats* of the *Peritonæum* grow very thick, in *Hydropick* persons, nay in process of time they acquire a *Cartilaginous* hardness, which is very necessary to be known; in a *Paracentesis* or opening of the Abdomen, there oftentimes suddenly follows a *watry swelling* in the *Cod*.

After a *Paracentesis* made by the formerly described Instrument: the reason of it and the passage are true, that the Water by little and little sinks down above the process of the *Peritonæum*, in the space between the *Peritonæum* and the right Muscles of the Abdomen.

2. Sometimes between the foldings of the Caul is Wind detained, the cause of long continued pain, which brings along with it, fear also of a future abscess. In this Case, besides *Sudorifics*, we use discussing Oyls and Plaisters. In the same folding is Water also sometimes included, which promisseth no certain hope of cure.

*Stenomas's* and other Abscesses, are often gene-

rated in the *Caul*, by reason of its great quantity of Fat, and its many Glandules, which are very difficultly cured.

3. The Guts, which move themselves variously like to Worms, sometimes they fall inwardly into one another, especially when afflicted with great pain; in this case the Excrements cannot pass to the Fundament; this Malady is call'd *Miserere mei*, or the Illiack passion; ordinary means effecting nothing, a great Cupping-glass without Scarification, is often to be applyed to the part affected, and taken off again: but whether it is not better to divide the Muscles of the Abdomen, and the *Peritoneum*, and draw out with the fingers the fallen in Gut, than to suffer the Patient inevitably to dye.

4. The *Messentery*, from it self, and also from the great number of the Glandules is subject to *Inflammation*, *Tumours*, *Ulcers*, and to *Corruption*. These Diseases seeing they are very difficultly distinguished from others, require an experienced Phylitian; we likewise speak the same of the *Sweet-bread*, and of the *Spleen*: Yet in the mean time, I will communicate to you this Plaister, whose vertues I have often experienced in the Cure of the Tumor of the said Parts.

Take Gum *Caranna*, *Ammoniacum*, of each a dram. Quicksilver kild with Turpentine, half an ounce: Make it into a Plaister.

5. The *Ligaments* of the *Liver* which joyns it to the Diaphragm, and to the Sword-like Cartilage, are often so much relaxt, that the Liver descends to the region of the Navel: this we remedy with this Plaister.

Take Roots of Bistort, three ounces; Bole-Armenick,

metnick, two drams; Cummin-seeds, a dram;  
Gum Galbannum, an ounce; *Ol. Nucifera* exprest, a  
dram: Make it according to Art into a Plaster.

Moreover the Liver is not freed from Inflammation, Ulcers, nay not from Gangrene it self.

6. The Gall may be broke from an extream Cough; a Stone also, nay sometimes many, are generated in it.

I was last year with a certain Scot, who in the space of four weeks voided two hundred Stones, and more by Stool; and was cured only by the use of the following purging Conserve.

Take Electuary of the juice of Roses, an ounces; Powder of Jalop, a dram; Spirit of Salt, a scruple: Make it into a conserve. Let him take each day, or each other day, the quantity of a Nutmeg.

7. For Wounds and Ulcers of the Kidneys, our Chirurgery furnisheth you with sufficient Medicines.

The Ureters are also subject to Exulcerations, but are cured by the same means, which are proper in Ulcers of the Kidneys: If they are broke either by a great Stone, or other cause, the Disease is accounted incurable.

8. Besides Stones, Worms also are generated in the Bladder, which may be expelled by Diureticks mixt with those things that kill Worms.

Take *Aqua Antinephritica*, an ounce; Water of Grass, two ounces; Spirit of Salt, six drops; Corallin, a scruple; Syrup of Wormwood, an ounce: Mix them; let the Patient take one half in the Morning, the other in the Evening.

This Injection also is convenient, it bringing them forth in a short time.



Take Holy-Thistle-water, six ounces; Mithridates Aloys dissolved in Spirit of Wine, of each a scruple; Honey of Centaury, half an ounce: Mix them.

9. The *Testicles* may as well as the other parts be inflamed; where, besides the general means, these outwardly are convenient: In the beginning let this Cataplasm be applied.

Take Powder of Red-Roses, Mertles, Balaustians, of each two drams; Barley-Meal, two ounces and an half; Oyl of Roses, Elder-Vinegar, of each an ounce; Red-Wine, as much as is sufficient to make it into a Pultise.

*In a vehement pain.*

Take Meal of Linseed, Barley and Fenugreek, of each an ounce; leaves of Henbane, a handful; Mal-lows, half a handful; Hoggs-grease, an ounce: Oyl of Poppy-seeds, an ounce and half; Milk, as much as sufficeth to make it into a Cataplasm.

If after the Inflammation an Ulcer follows, let the Chirurgion assist Nature with Suppuratives; the following Plaister is excellent to mollifie, ease pain, and to suppurate, which is also very good in any other Tumor.

*Emplastrum Filij Zachariae.*

Take yellow-Wax, Oxes Marrow, Hens and Ducks grease, of each a pound; the Muffilage of Linseed, Marshmallows, Fenugreek, of each four ounces; Oyl of Linseed, as much as sufficeth to make it into a Plaister.

The matter being come to suppuration, must be discharged, which the Chirurgion may do with a Lancet; for I cannot commend to him here a potential Cautey, from which I have observed

very

very ill success: Let the Orifice be little, and penetrate only the Tunics. For in this case although the matter be good, nevertheless the Disease is dangerous, and easily degenerates into a *Cancer* or *Gangren*, which cannot be taken away more conveniently than with a Knife, and must be done at the first appearance of it; then let the Chirurgion endeavour to cure the Ulcer as soon as possible, after the following manner; Let the Part be defended from all cold, and continually corroborated by Medicines, that the natural heat may be preserved in it: This Lotion used warm is good.

Take Flowers of Balaustians, Red-Roses, Mercurials, of each two Pugils; Aloes, a dram; Frankincense, two scruples; Plantane-Water, three ounces; Red-Wine, as much as sufficeth: Boyl them, and strain them.

This being used, apply the following Oyntment, putting over it a Plaister, or Cataplasim moderately discussing.

Take prepared Tutty, Ceruse washt, of each two drams; Red-Lead, Litharge of Gold, of each a dram; Sarcocols, three drams; Burnt-lead, two drams; *Unguentum Apostolorum*, half an ounce; Oyl and Wax, as much as sufficeth to make it into an Oyntment.

10. If the *Yard* be wounded, for the most part it is mortal: This Oyntment is very excellent.

Take washt Ceruse, three drams; Mirrhe, Litharge, of each a dram and half; Sarcocols, prepared Tutty, of each a dram; Tragacanth, two drams; Oyl of Roses, as much as sufficeth to make it into an Oyntment.

An *Inflammation* of it, is cured in the same manner, as an *Inflammation* of other sensible parts; but if an *External Ulcer* should happen, the Cure must be performed both by *Internal* and *External Medicines*, lest it contracts a *Malignity*, and degenerates into a *Sphacelus*.

Take *Litharge*, half an ounce; *Burnt-Lead*, three drams; prepared *Turty*, two drams; *Aloes*, a dram and half; *Pine-Bark* dried, four scruples; *Lapis Hematidis*, a dram; *Seeds of Dill* burnt, of *Gourds* burnt, of each two scruples; *Oyl of Roses*, *Quicksilver*, of each three drams; *Wax*, as much sufficeth to make an *Oyntment*.

But if it yields not to this by reason of its foulness,

Take *Verdegrease*, half a dram; *Water of Plantane*, and *Roses*, of each two ounces; *White-Wine*, four ounces; *Spirit of Wine*, an ounce: Mix them, and boyl them a little.

To this may be added, *Mercury Precipitate*, if there be occasion.

A *Sphacelus* in this case hath no certainer a cure than *extirpation* in part, or wholly, lest the mischief creep inwardly, and kills the Patient.

How the *Internal Ulcers* of the *Yard* ought to be cured: We have set down in the Chapter of particular *Ulcers*: But in this we way describe this Medicine, by the use of which a *Cancerous Yard* was cured.

*An Unguent of Peter Balerus.*

Take the juice of the tops of *Bramble*, *Stalks of Roses*, *Vinegar*, of each two ounces; *Frankincense*,

sence, Mastick, of each three drams, Litharge of Gold, an ounce; Sack, four ounces; Juice of Houfleeck, three ounces; *Aqua vite*, four ounces; Verdigreese, two ounces and half; Vitriol, burnt-Alom, of each a dram and half; Camphire, a dram; Oyl of Roses, four ounces: Powder those things that are to be powdred, very fine, and being searched, let them boyl all together upon a gentle fire, except the Camphire, which is to be put in at the end, to the consumption of the Juices, then add the Wax, and make it into an Oyntment.

11. The *Spermatick Vessels* sometimes in Women, are so greatly obstructed, that together with the Testicles in the side of *Hypogastrium*, they swell to the bigness of ones fist.

12. In the *Tubes* of the *Womb*, the Womans seed is sometimes corrupted, from which arise grievous Symptoms, the Courses being for some moneths obstructed, oftentimes there follows a Dropsie; the Water here collected, we have observed in dead bodies that have been opened to flow directly through the *Tubes* into the *Duplicature* of the *Peritonæum*.

13. The *Womb* from the preternatural Afflux of Blood is often inflamed, especially in lying-in Women, and in those whose Courses flow disorderly, this Inflammation oftentimes is changed into an Abscess, if negligently handled; whose Cure belongs to the Physician: But a *Sphacelous* is incurable. For what the Antients relate concerning the extirpation of the *Womb*, to wit, that it may all be taken off without any great danger, is to be reckoned amongst their other Errours; but whether this *Animal* in living Creatures, this  
necessary

necessary part, joyning to so many other parts, and furnished with such abundance of Arteries, may be cut out without danger of life? The same thing I believe hath hapned to them in this case, as hath happend in the describing and curing the falling down of the Womb, who here and there have taken the extended Tunicks of the Vagina Uteri for the Womb it self, for I easily grant these these Tunicks may without any great danger be taken away: But truly I esteem a *Sphacelus* of the whole Womb to cause certain death.

14. The neck of the Womb is subject to *Hemorrhoids* in the same manner as the straight Gut is, these flowing, may be distinguished from the Courses by these following signs, in the flowing of the Courses, we can observe no Branches or Vessels in the Neck of the Womb, they come out of the Womb it self, and they cause no pain, except in the *Hypogastrium*: these Vessels by which this Evacuation is made are the *Hypogastrick* and *Spermatick Arteries*, but the *Hemorrhoids* are the Branches of *Vena pudenda*, they may be known both by the sight and feeling, and there is no pain but in the privy part it self: They ought to be treated in the same manuer, as the other *Hemorrhoids* are; to ease pain, this Oyntment is excellent.

Take Mussilages of the Seed of Quinces, Marshmallows, of each half an ounce; Saffron, Oyl of Roses, Hens-grease, of each a dram; the yolk of an Egg: Make it into an Oyntment.



*This mixture is Excellent.*

Take Litharge of Gold, washt Ceruse, burnt-Lead, of each a scruple; Purslane-water, five ounces: Mix them.

Let the Hemorrhoids be washt with it, and let a Linnen-cloth dipt in it, be applied to the part affected.

*The end of the fourth Book of the third Part.*



The

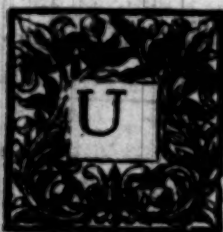


## The fifth Book.

### Of the Joynts.

#### CHAP. I.

##### Of the Hand.



Under the name of the *Hand* we comprehend also the *Arm*, whose Teguments, both proper and common, as also its Vessels are already sufficiently described.

It is commonly divided into

three parts,

1. The *Shoulder*.
2. The *Cubit*.
3. The *Hand*, properly so called.

The *Shoulder*, or upper part of the *Arm*, consists of one *Bone*, and nine *Muscles*.

The *Muscles* are,

1, 2. *Deltoides*, and *Supra spinatus*, which two raise it upward.

3, 4. *Anisclaptor*, *Latissimus*, and *Rotundus major*, which two pull it downward.

5, 6. *Pector*

5, 6. *Pectoralis*, and *Perforatus*, or *Coracoides*, which two draw it forward.

7, 8, 9. *Infra*, *spinatus*, *rotundus minor*, and *immersus*, or *subscapularis*, which three move it backward:

By these three last moving together, the Arm is as it were turned about, and obliquely outwardly raised up.

The Bone is great and long, its Head of upper extremity is invested with a Cartilage, membranous Ligament, and four Tendons, and furnished with a particular Cavity, in which the Tendon of the Muscle *Triceps* lies.

The lower Extremity is like unto a Pulley, which permits the Cubit to be bent very much inwardly, but not to extend beyond the right Line.

The Cubit consists of two Bones, which are by proper Muscles properly moved, which although out of order, we are forced to set down in this place.

The lower Bone, which is greater and longer than the other, is call'd *Ulna*, in its upper extremity are two triangular processes observed, which are call'd *Rostra*, or *Glandes*.

The lower Extremity ends with a round Knob, to which is joyned a sharp Process, which is call'd *Spyloides*.

It is moved by fore Muscles, of which two are *Flexors*.

1. *Biceps*.

2. *Brachialis*.

Two Extensors.

1. *Longus*.

2. *Brevis*.

The

The upper-Bone, which is less and shorter, is call'd *Radius*, or the *less facit*, it is received in the upper part of the *Ulna*, in the lower part it receives the *Ulna*, in the middle they are a little distant from one another, which space is yet fill'd with a thin Ligament.

It is also moved by four Muscles, whereof two are *Pronatores*, or pullers down.

1. *Rotundus*.

2. *Quadratus*.

The other two are *Supinatores*, or raisers up.

3. *Longior*.

4. *Brevior*.

Some add to these two other Muscles, but they are very seldom found, and diversly described.

The *Hand* is divided into three parts, the *Carpus*, or Wrist, the *Metacarpus*, or the distance between the Wrist, and Fingers; and the *Fingers* themselves.

The *Carpus* hath four Muscles.

Two, *Flexours*, the *Cubitans*, and the *Radius Internus*.

Two, *Extensours*, the *Gubitans*, and *Radius externus*.

Under these lye eight little Bones, as yet without name, which are in the first years Cartilaginous and soft, but afterwards become harder; they are tyed, and joyned together with strong Ligaments.

The *Metacarpus* hath two Muscles, call'd *Palmares*, *Longus & Brevis*; and four Bones fastened to the *Carpus* by the assistance of the Cartilaginous Ligaments.

The *Fingers* consist of fifteen Bones, which as yet have no certain names given them, and 14 Muscles; whereof,

TWO

Two are *flexours*, *Sublimis*, & *profundus*.

Two *Extensours*.

Four *Aductours*, *Lumbricales*.

Six *Abductours*, or *Interossei*. Three are *External*, and as many *Internal*: Besides these, the *Thumb*, and *little-Finger* have a particular *Flexor*, and *Extensor*.

There are besides to be considered in the *Hand*,

1. The *Armillæ Membranosa*, which is a round Ligament, comprehending the many tendons of the *Hand*, as it was in a Circle, easily divisible into many others.

2. *Vagina Membranosa*, which hold in the Tendons contained in the *Hand*.

3. *Fissura oblonga*, framed in each Tendon, for the passage of the Tendons of the Muscles moving the third Joynt; this serves in nature of a Pulley.

4. *Offæ sesamoideæ*.

### *Chirurgical Considerations.*

1. The *Shoulder* oftentimes is broken or put out of joynt, but is oftener afflicted with a *Catar* and *Gout*. In a cold *Gout* I never found any thing more efficacious than the Stiptick Plaster of *Crolius*, mixt with Oyl of *Bricks* or *Phylosophers*; as also the following Plaster,

Take *Naval-Pitch*, *Colophony*, of each three ounces; *Mussilages*, of *Marshmallow-roots*, two ounces and a half; *Ammoniacum*, *Galbanum*, *Mastic*, *Mirrhe*, *Frankinsence*, of each an ounce and half; *Propoleus*, *Mistletoe* of the *Oake*, round-*Birchwort*, burnt-*Brass*, yellow-*Wax*, *Turpentine*, of each three ounces; Oyl of *Earth*, two ounces;



ounces : Make it into a Plaister according to Art.

In a *bot Cathar*, or the like *Gout*, I have always found this Fomentation of singular use.

Take Vitriol white, and green, of each half an ounce ; prepared Nitre, six drams ; Crude Alom, one dram ; Mirrhe. two drams ; *Opium*, a dram ; White-Wine, half a pint ; rectified Spirit of Wine, ten drams ; Elder-Vinegar, three ounces : Mix them for a Fomentation.

Under the *Armpits*, Venereal Bubo's appear as well as in the Groins.

2. Often *tough Phlegm* seizeth upon the joint of the shoulder and Elbow, from whence comes a stiffness. I have learnt by experience to esteem much in this case of Balsom of *Pern*, as also of the following Oyntment.

Take Fox-grease, and Rams-grease, fresh-Batter, of each two ounces ; Oyl of Earth-Worms, an ounce ; rectified Spirit of Wine, four ounces : boyl them to the consumption of the Spirit of Wine ; then add Oyl of Rosemary, of Amber, of each three drams ; of Tiles, or of the Philosophers, two drams : Mix them, and make it into an Oyntment.

3. One or more of the little Bones of the *Carpus* oftentimes are *dislocated*, which if not presently reduced, becomes an incurable evil.

A *Ganglion* is here very frequent, besides the *Cathar* and *Gout*, whose Cure we have but just now taught.

4. In the *Metacarpus* and Fingers, both above and below, meet many Tendons, which are easily injured in Wounds and Ulcers, which is carefully to be observed, lest a Palsie follows :

In

In which no other Medicines are needful, than what we have already in the foregoing declared: But these are chiefly to be considered of; 1. That the Bandage be not bound too hard. 2. You must not put in the Probe too deep, not too often. 3. The Hand and Fingers is to be placed upright, not depending. 4. These parts are easily affected with a *Sphacelus*, which these signs certainly pronounce; When there is no matter in due time; the Lips in the beginning are dry, or yield a little thin moisture; the heat, pulsation, and redness is greater here, than in the fleshy parts; afterwards the Lips are turned in, and become livid, and at length black. In this case, all those Medicines are to be applyed that may put a stop to the *Gangrene*, and as formerly we have set down.

## CHAP. II.

## Of the Foot.

**T**He Foot is also divided into three parts, to wit, into the *Thigh*, *Legg*, and *Lower Foot*.

The *Thigh* hath but one Bone, to whose motion serves fourteen *Muscles*.

Two Flexours, or bending it forward; *Psoas*, and *Iliacus*.

Three Extensours, or bending it backward; *Gluteus major*, *Medius*, and *Minimus*.

Three Adductours, or drawing to the inside; *Triceps*.

Six Abductours, or drawing it towards the outside, *Quadragemini, & obturatoris duo.*

The Abductours and Adductours working together, rowl about the Thigh.

The Thigh-bone is the greatest of all the Bones of the Body, outwardly it buncheth forth, and is a little bended inwardly, and so descends internally oblique to the Knee.

It hath three *Processes*, easily separable in Infants.

The Legg consists of two Bones; the greater of which, is in the inside, and is call'd *Tibia*, or the greater *focile*: the lesser, which is in the outside is call'd *Fibula*, or the lesser *Focile*: both very much resembling the Bones of the Cubit: they are a little distant one from the other, but are tyed together by a Ligament.

It is moved by eleven *Muscles*, which are,

Four Extensours, *Rectus, Crureus, Vasti duo.*

Four Flexours, *Biceps, Semimembranosus, Seminevrosus, Gracilis.*

Two Adductours, *Longus*, and *Popliteus*.

One Abductour, *Fascialis.*

Between the Thigh and Legg lyes the *Patella*, or *Knee-pan*, in Infants Cartilaginous, in old people, hard, and strong; placed on the out-side of the Joynt.

The Foot is divided into three parts, the *Tarsus*, *Metatarsus*, and *Toes*.

The *Tarsus* is moved by six *Muscles*, viz.

Two Flexours, *Tibialis anticus, & Peroneus.*

Four Extensours, *Biceps*, two *Gimelli*, and *Soleus*, to which many add a fifth, *Tibialis posticus.*  
Three

Three of these Extensours form one very strong Tendon, which is call'd *Corda Hypocritica*.

It is made up of seven *Bones*, which are,

1. *Talus*, or *Astragalus*.
2. *Calx*, or *Os Calcis*.
3. *Os Naviculare*, or *Cimiformis*.
4. *Os Tarsale*, or *Cuboides*.
- 5, 6, 7. *Ossa tria Cuneiformia*, or *Sphænoides*.

The *Metatarsus*, consists of five *Bones*.

The *Toes* have fourteen *Bones*, for the great Toe hath but two Joynts.

The *Metacarpus* hath no Muscles, except *Plantaris*, which is not unlike *Palmaris*.

The Muscles of the Toes are seventeen, to wit,  
Two Flexours:

One Extensour of the four Toes, for which use 'tis furnished with a fourfold Tendon.

Four Adductours, or *Lumbricales*.

Ten Abductours, or *Interossei*.

To the great Toe are peculiar,

One Flexour.

One Extensour.

Two Adductours.

One Abductour.

Here also, as in the Hand, are observed the *Ossa sesamoidea*, which are always placed between the full grown Joynts, partly that they may corroborate the Joynts, partly that they may defend the tender Joynts; in old people they are always numbred from ten to twenty, never in Children.

*Chirurgical Consideration.*

o The Foot in its natural constitution, as also in its diseases, have many things agreeing with the Hand, therefore it would be superfluous to repeat them over again.

1. Considerable here is the *Sciatick pain*, caused from a sharp Humour gathered in the Joynt, where the Thigh-bone joyns with the *Os Ischium*, when the *Ligament* tying these Bones together, is from such an Humour relaxed, the Bone recedes from the natural places, and brings upon that part a lameness: If the Bone, or Cartilage be corroded, and the Vessels compressed, there follows an Atrophy of the Leggs, and sometimes of the whole Body.

2. *Tumours* in the *Knee* are very dangerous, and hard of Cure, by reason of the firmness of Muscles, the great number of Ligaments, Tendons, and Bones, and the cold and dry nature of the parts, not being of force sufficient to dissipate the moisture; therefore it is most necessary to assist it with warm Medicines as soon as possible, and if any signs of Suppuration appear, forthwith let it be opened, lest otherwise the Patient becomes lame, the part wastes, and at last happens Death it self. Upon the opening of the Abscess, for the most part there follows a gleet of some Humour, which renders the Cure very difficult: For this I commend the often praised Restorative Powder.

3. A great *Tendon* is inserted in the *Calcaneus*, or Bone of the Heel, which being wounded, or much contused, brings Convulsions, and Death it self.

About



About this place comes Kibes, whose cause is intense cold, or heat with dryness: Here first are observed Fissures in the Skin, then follows an Ulceration: All fat things and Plaisters profit here, especially the following.

Take Powder of Galls, of round-Birthwort, of each half a dram; red-Lead, a dram, Mercury sublimate, six grains; Litharge, Mirrhe, of each a dram and half; Camphire, a scruple; Frankinsence, two drams; green-Wax, as much as sufficeth to make it into a Plaister.

In the room of green-Wax, you may take the Fat of Deer, or of Rams.

4. The Fingers or Toes being frozen, must be rub'd with Snow, or with a bruised frozen Turnep; then this following Plaister is much commended.

Take Hoggs-grease, fresh Oyl of Olives, of each an ounce; white-Wax, two ounces: Boyl them a little, and make a Plaister.

5. Issues are often made in the Joynts; we have formerly declared the place: In the Arms, between the Muscle *Deltoid* and *Biceps*; in the Thigh, two Fingers breadth above the Knee in the in-side; in the Legg the uppermost, two Fingers-breadth below the Knee; the lowermost, two Fingers, or three above the Ankle. That you may make these Issues without pain, instead of a Conclusion, take this Caustick, which works without pain; which is also very much to be commended, in sordid and cancerous Ulcers, and in Excreescencies.

Take Crude Brimstone, white-Arsnick, Crude Antimony, of each two ounces: the Brimstone being melted by a gentle fire, and stirred about

with a *Spatula*, add the Arsnick, and Antimony powdred, and mix them whil'st they are incorporated with the Brimstone, and look red. Afterwards

Take of this Mixture an ounce; *Caput mortuum*, of Vitriol, half an ounce; Mix them, and make a Powder; let it be washt six times in Spirit of Wine, and dried for your use.



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THE Plague is a Disease whose nature is not to be comprehended by us; the Cause thereof seems to proceed from a Spirituous and Infectious Vapour, which is powerful enough to make a suddain dissolution of the consi-

stence of the Blood, by which means the Heart is deprived both of Strength and Life.

I do asserť that the Nature of it is not to be comprehended by us, as well because it is a Punishment inflicted on us by the immediate hand of Almighty God, who vouchsafes not that his Incomprehensible Wisdom and Essence (which is sometimes faintly described to us) should be narrowly pryed into by his Creatures; as also that it is in it self so mutable, that if we should

seriously recollect our selves, and recount the several Pestilences wherewith all former Ages have been visited; we shall not thereby be able to instance in two of that whole number which have agreed with each other in all Circumstances: From whence we may easily infer, that in the Cure of this Disease, an Experienced Physician may much more safely follow the Dictates of his own Reason, than adhere strictly to the Method and Prescriptions of others. For although it doth sometimes by the more remarkable Symptomes sufficiently evidence it self, yet we cannot likely discover its Nature and Essence, although we should the most industriously attempt it.

But that we may cautiously enquire into it, we must know that it is sometimes not accompanied by any Feaver: And it is necessary, that what Physician soever is ignorant of this, should either by perusing good Authors, or his own experience acquaint himself thoroughly with it. I have been sent for to several Patients my self, who although they appeared otherwise in good health, not refusing their Meat, not disturb'd in their Sleep, have neverthe less had Buboes arising in their Groin, on their Neck, under their Arm-pits, or behind their Ears, which have apparently discovered a greater Malignity than could be discerned in those Buboes, which in other persons have been attended by a violent Feaver: And many hereupon who have been incredulous, and lightly regarded the cautions which I have given them upon this account, have with great danger to themselves experimented, that as soon as those Buboes have sunk down, the Pestilential Symptoms which have appeared, have been very dreadfull and much



much more dangerous than in those that have carefully used the means prescribed to them, who have been also much more easily and speedily cured than the other.

*Sometimes the Plague is accompanied with a Fever; and again, there are some Pestilent Fevers without the Plague.*

To distinguish this Fever from the Plague, I used to observe, that they that are seized with it, complain of pain in their Head and Stomach, which sometimes is dispersed over the whole Body; Sometimes it confines it self to the Armpits, the Neck, the parts behind the Ears, or to the Groin. To outward appearance, there is not the least swelling. If the Patient by such means as is requisite be provoked to sweat at the beginning of the Disease, the pain utterly ceaseth, and in a few dayes he will be perfectly restored to his health, the Disease not having at all discovered it self by any outward Symptoms. Why such a Fever should be accounted a species of the Plague, I see no reason: But there is no one but will confess it to have seized on that Body on which Buboës, Carbuncles, and Spots do outwardly appear.

The cause of the Plague is either *Internal* or *External*; but unto which soever we impute it, it is necessary to conclude, that there is in it a power of dissolving the natural consistence of the Blood, and depriving the whole Body of its strength.

As to the *inward Cause*, which is *Meat and Drink*, it is evident to all, that it cannot produce in any body whatsoever so great and suddain a



changes; but it is most certain, that by a long & continued course of bad Diet, the Blood may by degrees be after such a manner dissolved, weakened, and corrupted, that some part of it assuming to it self a Malignant quality, a man may be surprised by a suddain Disease, and sometimes be deprived of Life it self; which hath been observed in sick persons at several times, when there hath been no Contagion in the place, nor any suspected, who have been troubled with perfect Buboes and other Symptomes of the Plague, much more intollerable than others have been at any time when the Air hath been infected.

As to the *outward Causes*, every one confesseth that there are such, but their Nature is known but to few: The Chymists who are able by the force of Fire distinctly to separate the Parts of simple Drugs, endeavour to find the Original of the Contagion in a *Volatile Salt*, which suddenly dissolves the fixed Salt of the Blood: which hath indeed some appearance of Truth, though it will not be relished by all men.

If you enquire into the Cause hereof from others, their answer will be various, but most of them very idle and impertinent.

It hath by some been thought probable that a Plague might proceed from the *Heavens*; they affirming that the *Stars* do actuate the Sublunary Bodies, both by the influence of their Light, and by several other qualities inherent in, and peculiar unto them. But the conjectures raised from hence are very uncertain, and the foundation of them unsecure. We are not ignorant of the fopperies of Astrology, and of the vanity of those Predictions, which have no other Foundation

dation than the several Courses, the Conjunction and Opposition of the Stars; which are all so frivolous, that we cannot think it worth our labour to refute them.

We acknowledge that the *Air* may be several ways corrupted, from whence the Vapours which have been received from the *Earth*, are sent down again amongst us, which like *Fire* may inkindle our *Blood*; *Corrupt Waters*; *Carcaffes* either not at all buried, or else shallowly Interr'd; The *South Wind* which may be supposed to promote the Putrifaction: *Men* already infected, and successively imparting the Contagion to the sound, and by that means spreading the *Venom* through the bodies of *Men*, and the *Air* it self.

This Pestilential Infection may likewise for a long time lye couched and concealed in *Straw* or *Stubble*, amongst *Garments*, *Hangings*, and the *Furniture of Beds*; which we have sometimes observed strangely to impart their Malignity to those that have handled them, or approached unto them.

But all these things only inform us of the means by which this Pestilential Poison is conveyed unto us: But no one hath as yet declared what it is, and wherein its Nature doth properly consist.

*The Symptoms of it are these.* The sick Persons are seized with a shivering all over their body, which is presently followed with an inward heat, which is oft-times very intense, yet without any great thirst; sometimes the thirst is excessive, and the Feaver moderate. But whether the heat of the Feaver be great or small, it is most commonly accompanied with a driness of the Tongue,

and an Urine of the same Constitution which you might expect from a Man in perfect health: They are taken sometimes with a great drowsiness, sometimes with a *Delirium*, or with an excessive pain in the Head; and in this case the white of the Eyes appeareth of a Saffron colour, and they are more wakeful than is consistent with their case and quiet: Great pain at the Heart, the Pulse seems small, if not at first when you touch it lightly ( for then it oftentimes appears to beat high ) yet at last when you press it closely with your fingers. The strength fails in the beginning of the Disease, and decreaseth much more visibly than in the most burning Feaver, which hath no Malignity attending it. Some are taken with a *Diarrhea*, which can by no means be stoppt: Others bleed much at the Nose, the Eyes, Ears, or Mouth; some at the Yard, or Womb. Some are troubled with a continual Vomiting, others with a Nauseousness. On some Bodies there appear red or Purple Spots: and on others Buboes behind their Ears, on their Neck, under their Chin, in the Groin, and under the Armpits: In some there break forth red Weals or Pushes, in others white Bladders, or Carbuncles. And wheresoever these Bladders, Buboes, Carbuncles, &c. do appear, they are a most certain sign of the Plague, although the bigness of them may be inconsiderable, especially if they either accompany, or are consequents of a Feaver.

As to the Prognosticks, we must consider, that the Plague is a very treacherous Disease, and whil' it flatters us most, it intends us the greatest mischief. A Bubo is less dangerous than a  
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Carbuncle, and a Carbuncle than the Spots, which very seldom portend less than present Death wheresoever they are display'd.

A Bubo behind the Ears, on the Neck, or under the Arm-pits, is more dangerous than that in the Groin.

Carbuncles on the Hands and Feet may by some be thought less pernicious, because they are more remote from the Heart; but since they happen amongst many Nerves and Tendons, they are more to be feared than those which appear in other parts of the body which are better covered with flesh.

A Carbuncle arising after a Bubo, is a sign of Death. If a Bubo or Carbuncle appear before the Fever, there is less danger than if they follow it at a distance, and arise slowly.

A blew Circle encompassing the Bubo the second day after its appearance, is a sign of Death.

If a Bubo suddenly disappears, the state of the Patient is dangerous, unless Nature dispatcheth the Malignant Humor to some other Part.

Thus we have often observed, that upon the retreat of *that Morbifick matter* which hath caused a Bubo in the Groin, there hath appeared a Gangrene in the Foot, and on the same side which was before affected, and many have by that means escaped.

If a Cupping-glass apply'd to the Patient, raiseth no Blister, we may reasonably conclude his condition to be desperate.

It is an infallible sign of Death, if after Cauterization, or the application of a Cupping-glass, the Carbuncle abates not in 12 or 24 hours, as likewise if there is no moisture proceeding from it;

but if a Bladder appears , or any separation of the matter be made ( which is so much the better, by how much it is the greater ) with a sufficient purulency, *the Patient is then past danger.*

A Carbuncle which seems to have a little Tail, or Push at the end of it, is very dangerous; as are likewise those which look white, which, unless the Feaver doth very much abate , are certain forerunners of Death.

If the Patient that hath a Bubo in his Neck, or behind his Ears, be troubled with a pain in his Throat, and a difficulty of swallowing, and no considerable Inflammation appear , we have always found it a certain Rule, that in this case he outlives not 12 or 15 hours.

Sleep more sound than ordinary , *Deliriums* , waking often in the night , inflammation of the Eyes , pain at the Heart , a trembling and convulsion of the Joynts, are all very dangerous Symptoms , but do not always portend Death.

A great Feaver without a pain at the Heart, is not so dangerous as a lesser which is accompanied with that Symptom.

The greatness of the Danger may sometimes be judged from the great dryness of the Tongue.

If by the administration of *Sudorifics* , Sweat is not provoked , the Patient usually miscarryeth.

A Flux of Blood was heretofore held dangerous in all Plagues, but in our Age, all that can either bleed at the Nose, or have their Menstrua's, come off safe: we have no president of any that have pissed blood ; but a *Dysentery* is the sign of an approaching Death.



It is very certain, although it but seldom happens, that incurable Carbuncles do break out about the Eyes, Nose, and Stomach, and even amidst the Entrails themselves.

If they seize on the Bladder, they become mortal to the Patient, and put him to excessive pain.

I can instance only in one, who after he had for 30 hours or more been troubled with the Spots; at length, after exceeding great pain, accompanied with a *Delirium*, he voided first Blood, and after that a *Purulent matter through his Yard*, by which means he was restored to his health. I conjectured that there was a Carbuncle in the case, which seized not on the Membranous Part of the Bladder, but on the Neck thereof.

As to the *Cure*: *Bloodletting* is very prejudicial to those that already have the Plague, and dangerous to such as would prevent it.

The Poison oftentimes lies hid within the Body for some days, weeks, or moneths, before it discovers it self by seizing on the conveyances of the Blood. Wherefore I would advise you seriously to consider, if by opening a Vein, you invite it immediately to the Heart, whether the diminution of Blood, Spirits and Strength, which is effected by this means, be not the Cause why the Heart is suffocated, and deprived of that vigour which it should make use of to repulse the Enemy. I confess some Experienced Physicians of good credit have reported, that in hot Countries, there is no better means for restoring a Patient visited with the Plague unto his health, than that of opening a Vein, provided it be done cautiously, and at the beginning of the Disease; but

but whosoever have attempted it in colder Climates, have quickly learnt by experience, that it ought to be forborn.

*Purging*, which is oftentimes very necessary in other gentle Diseases, is excluded by the Malignity of this. But every one is not quick-sighted enough to discern when it is requisite to be done, and when to be forborn: Moreover, it is evident that in a Malignant Disease, the Physick which is administered to a Patient, ought to be more mild and gentle than at other times; for besides that the Body cannot then bear strong Pur-gations, a *Dysentery* is oftentimes the consequence of them. I have when I have been fully perswaded that there was no Malignity in the Disease, oftentimes used this, or some such like Potion with good success, *viz.*

Take Rhubarb, a dram and half; Senna, two drams; Cream of Tartar, a dram; Scorzonera-Roots, half an ounce; Aniseeds, half a dram: boil them in Holy-Thistle-water, and to three ounces of the strained Liquor, add Syrup of Suckory, with Rhubarb six drams; Spirit of Salt a little; Confection of Alkermes, a scruple: Make, it into a Potion.

I never adventured to Prescribe any thing Pur-gative, to such as have been taken with the Plague, before the 14th day, at which time the Fever, and the other Symptoms of the Disease would be abated: There are some who have attempted it while the Carbuncles remain Purulent, and before the Bubo is perfectly cured.

But I dare not advise any one to follow that Method, whatsoever Remedies they administer

ister at the same time, which may be intended specifically against the Plague.

But if it happen that the Patient for several days be very costive, and troubled with a pain at his Heart, and hopes to be relieved by *Purgation*.

It is to be considered, that the Venom of the Disease, and not the costiveness is the cause of the pain at the Heart; it is therefore most requisite to make use of *Sudorificks*, to corroborate the Heart, and not to concern your self for the costiveness of the Bow; but if you desire to open it a little, it is better to make use of a *Suppository* than a *Clyster*, which is not altogether so safe, but hath been very prejudicial to many on this occasion, and to others it hath done but little good, and not at all opposed the Malignity of the Disease: But to such as will not take this advice, which hath been confirmed by Experience and several good Reasons, and will still persist to make use of *Glysters*, it is fit however that they forbear to prescribe *Scammony* as an Ingredient, especially to Women in the time of their Flowers.

*Juleps* are in this case very necessary, but all persons may not make use of them, nor any at all times. I am never wont to prescribe them without joyning with them some *Sudorificks* (which will appear hereafter) and this I take to be the safest course. For if the sick person should make use of such things only as refrigerate whilst he sweats freely, the sweat would oftentimes strike inward, and the Venom would be conveyed to the Heart, from whence would follow suddain Death.

There

There is no means more requisite than that of *Diaphoreticks* and *Cordials*, especially those that are acid, which produce such Effects as are certain, and therefore the more laudable; for they rectifie the Mass of Blood, and free it from the Venom which infects it. They dissolve the pituitous Matter which is lodg'd in the Stomach and the Entrails, and correct the *Choler*, which in this Disease is the Cause of much mischief. Nevertheless the several Disguises of this Disease, and the vanity of the Symptoms which attend it, do require that they should be often changed; since when the Disease is more gentle, those things are not to be used, which would do good service in an accute one.

*Medicaments against the Plague.*

*Roots* of Zedoary, Butter-Bur, Angelica, Dittamny, Galangal, Vipers-grass, Gentian, Masterwort, Lovage, Pimpinell, Orisic Florentine, and ours, China, Sarsaparilla.

*Leaves* of Rhue, Scordium, Sage, Holy-Thistle, Swallow-wort, Wormwood, Southernwood, Centaury the lesser, Valerian, Sorrel, Fluellin, Balm, Marjoram, Rosemary, Time, Mint.

*Flowers* of Borage, Bugloss, Violets, Roses, Marygolds, St. Johns Worts, Rosemary, Indian-Spikenard, Jesamy.

*Seeds* of Citrons, Oranges, Rhue, St. Johns Wort, Anise, Coriander, Lovage.

*Fruits*, Citrons, Oranges, Walnuts, Figs, Sharp Cherries, Pippins, Ribes, sour Pomgranates, Barberries.

*Spices*. Musk, Ambergreese, Civet, Benjamin,

*Soot*

*Storax Calamita*, Cinamon, Mace, Nutmegs, Cardamums, Camphire.

*Animals*, or *their parts*; flesh of Vipers, Mumy, Serpents, Quails, Thrushes, Harts-Horn, Unicorns-Horn, Bezoar, Stone of an Indian Hogg, Ivory, Castor.

*Precious Stones*, and *Earths*; the Jacinth, Garnet, Emerald, Ruby, Carbuncle, Pearls, Coral, Bolearmenick, Earth of Lemnos, and sealed; Gold, Silver.

*Salts*; Common, brought lately from the River Nile, which moveth Sweat most powerfully: of *Scordium*, of Wormwood, Rhue, Self-heal, Holy-thistle, Vitriolated Tartar, *Bezoarticum Minerale*.

*Treacle* of *Andromachus's*, *Diateffaron*, *Mithridate* of *Damocratis*, *Diascordium* of *Fracastorius*, Confection of Alkermes, of Hyacinth.

*Species Liberantis*.

*Electuaries*, Of the Egg, Rob. of Currants of Barberries.

*Conserves* of Balm, Mint, Rosemary Flowers, Borage, Bugloss, Marygold Flowers.

*Troches*, Of the Juice of Barberries, of Citrons.

*Out of all which, you may make choice of such as you judge most fit for the purpose.*

The Writings of Authors who have Treated of this Disease, will give you an account of other Compounds, out of which you may choose such as please you best.

I shall here propound such only as I have found to be most efficacious, and which I shall constantly make use of, till by experience I shall dis-

cover



cover some others, whose nature is more excellent, and that the use of them may the more plainly appear, I shall premise some Medicaments that some years since were prescribed by my self, and those Learned Men, Dr. Francis Sylvius, and Dr. Francis Vanderschagen, wherewith we thought it necessary to oppose that pernicious Enemy with which we were to contend.

*Our Prophylactic Water.*

Take Roots of Angelica, Zedoary, of each an ounce; Roots of Butter-bur, two ounces; Leaves of Rhue, four ounces; Leaves of Balm, Scabious, Marigold-Flowers, of each two ounces; Unripe-Walnuts sliced, two pound; fresh Citrons sliced, a pound: let them be all bruised together, then pour upon them six quarts of the best Wine-Vinegar, distilled by it self in a Glass *Cucurbit* in Sand.

Let them digest a night, then Distill them with a gentle fire of Embers to dryness, but without burning, and preserve this Vinegar for your use.

If you desire an *Extract*, or *Salt*, pour some of the Distill'd Liquor upon the *Caput Mortuum*, or to the remainder, and let it digest for three days, till it hath drawn out a Tincture, which filtre, and distill the filtered Liquor in *Balneum Mariæ*, to the Consistence of an *Extract*: After the *Extract*, Calcine the *Caput Mortuum*, and draw forth the *Salt*.

*Our Prophylactick Conserve.*

Take fresh Citrons, two pounds; the Juice hard prest out, the outward Coats separated from the inward Pulpe, and bruised very small; adding Conserve of White-Roses, half a pound; of Red-Roses of Borage flowers, of each half a pound; preserved Orange peels, 4 ounces: Make it into a Conserve.

*Our Alexipharmick Powder.*

Take Roots of *Contrayerva*, half an ounce; Pestilent-wort, Tormentil, Elicampagne, of each two drams; Scaled Earth, Bolearmenick, of each three drams; Shavings of Harts-Horn, Ivory, of each a dram; Red Coral prepared, four scruples; Biting Cinamon, two drams; Diaphoretick Antimony, half an ounce: Make it into a Powder.

I have made use of these three foregoing Medicines with very great success, as have also those Famous Physicians before mentioned, when they have applyed them to several that have been visited with the Plague. When I have given them for a preservative against the Plague, I seldom mixed any other with them; but for the Cure of it, I never made use of them single, but have always given them with these, or some such like, *viz.*

Take Diascordium of Fracastorine, 4 scruples; Salt *Prunella*, a scruple; Salt of Wormwood, half a scruple; our Prophylactick Water, Holythistle-water, Syrup of Barberries, of each an ounce: Mix them for a draught.

Or,

Or,

Take our Alexipharmick Powder, a scruple; Vitriolated Tartar, 8 grains; Salt of Coral, fifteen grains; Confection of Alkermes, half a dram; our Prophylactick Water, an ounce and half; Rue-Water, as much as sufficeth, Syrup of Holy-Thistle, an ounce: Mix it for a draught.

Or,

Take Antimony Diaphoretick, a scruple; Salt of *Scordium*, of Rue, of each half a scruple; our Prophylactick Water, an ounce; Fumitory-water, as much as is sufficient; Julep of Roses, an ounce: Mix it for a draught.

Take Confection of Hyacinth, *Diascordium*, Threacle, of each two scruples; our Prophylactick Extract, 15 grains; Spirit of Salt, half a scruple: Mix it into a Bole.

Take our Prophylactick Conserve, a dram and half; Prepared Crabs-eyes, a scruple; our Prophylactick Water, half an ounce; Syrup of Lemons, an ounce; Elder Vinegar, half an ounce: Mix it for a draught.

Take Bezoartick Mineral, 15 grains; *Sal Prunella*, a scruple; Lozanges of Sugar pearl'd, half a dram: Make it into a Powder.

Let the sick person take some of these Medicaments for the provoking of Sweat plentifully, to which purpose, let him take Mutton or Chicken-broth an hour or two after he hath taken his Medicament; let the sweat be gently wiped off with a warm Cloth, and another applied to his Breast: For we have found it not safe to change the Shifts, and other Linnen about the Patient,

tient, unless they are too much moistened by sweat.

We may safely administer these, or the like *Sudorificks* twice in a day to the Patient, or thrice in 24 hours, and that very much to his benefit.

There are some, who every six hours have very advantageously made use of a new *Sudorifick*. Nor are you easily to be perswaded to cease from the use of these means, although the Patient should tell you that he is well in health, lest you find the treacherous Disease of a suddain to surprise you both again.

For young Children (who do usually abhor the taking of Physick) I have found nothing better than the following Powder, given them in their ordinary Drink, 2 or 3 times, in the space of 24 hours: the Sugar may be omitted, if the Patient disgusts sweet things.

Take Diaphoretick Antimony, 15 grains; Lozenges of Sugar pearl'd, a Scruple and half: Make it into a Powder.

Or,

Take Crabs-Eyes prepared, Shavings of Ivory, Ezcortick Mineral, of each six grains: Make it into a Powder.

*We will Treat of Juleps when we come to discourse of the Cure of the Plague.*

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## The Symptoms of the Plague

They are many, and very various, but most of them are accompanied with some others, which when the former are cured, the later are very easily removed. We therefore think it very needless to give an account of them all in this place, it will be sufficient to instance in the chief of them, amongst which we in the first place encounter with

*A Fever*: Of such a nature that it admits not of any Purging, or letting of Blood, which the experience of several hath sufficiently confirmed.

The *Sudorificks* before prescribed are no less useful for this Symptom, than for the Plague itself; but the *Fever* and great dryness of the Tongue, requiring such things as refrigerate, they are not to be administered, except they are mixed with *Sudorificks*, as we have shewn before.

Take Water of Borage, Sorrel, of each two ounces; our Prophylactick Water, an ounce and an half; Juice of sowre Oranges, fresh Citrons, of each two drams; Julep of Roses, as much as will make it conveniently sweet; Oriental Bezar, 15 grains: Mix them.

Let the Patient often take the quantity of a spoonful hereof at once, whereby his thirst will be much better allayed, then if he should drink



ten times the quantity of Beer, and that without any check or hindrance to the sweat.

Or,

Take Holythistle-water, a pint; Our Prophylactick Water, two ounces; Syrup of sowre Pomegranates, two ounces and an half: Mix them.

Or,

Take Scorzonera-Roots, Butter-bur-Roots, of each an ounce; Sorrel Leaves, two handfuls; boil them in Barley-water, and to a pint of the Liquor, add Syrup of Violets, two ounces; *Sal Prunella*, two scruples; or Spirit of Salt, as much as is sufficient: Mix them.

For the Rich, such like Juleps as these may be prepared, which are both pleasant to the Palate, and very Cordial.

Take Borrage-water, three ounces; Holy-Thistle-water, a pint; Rose-water, an ounce; Lozenges of Sugar pearl'd, an ounce; Amber-greece, two grains; Musk, a grain; Juice of Citrons, as much as sufficeth: Mingle them.

*Wesop-Ale*, or some such like, which is well boyl'd, may here be very useful, especially if some Nutmeg scrap'd, or a piece of calcined Hartshorn be tied up and steep'd in it. Nor need we fear any mischief from exceeding either in the quantity, or the frequent repeating of it; but we must take heed that it be not given cold, lest Gripings, Flux, and a pain at the Heart, and such like Maladies should be caused thereby.

To such who have weak stomachs, and a pain at their Heart, I do use to give the liberty, when their Fever abates, to drink *Mosel*, or *Rhenish-wine*

B b 2

with

with Sugar, and the juice of *Lemons*, provided that they take it in a moderate quantity: But I believe they do err very much, who prescribe to their Patients, whilst the *Feaver* continues still very high, some sort of *French-wine*, either alone by it self, or mixt with their *Sudorificks*.

That Oriental Stone, call'd *Lapis Porcinus*, or *Pedro Porco*, is of very great use, if it be steeped for a while in your ordinary Drink; for it strongly provokes Sweat, and very much refresheth the Heart.

This Stone, if I mistake not, is generated in the Gall of an Hogg, for it is exceeding bitter, and though it be very hard, yet every time it is infused, it abates somewhat of its quantity, which is discoverable by the Tincture which it imparts to the Liquor. Nor is the Gall of a Man sometimes void of such Stones, which are like unto those taken out of an Hogg in Savour, Hardness, and Colour, and we might find them too perhaps in their efficacy likewise, if we thought fit to make trial of them.

This *Feaver* is often accompanied with *Drowsiness*, which forbids the use of the Principal *Sudorificks*, such as *Treacle*, *Mithridate*, *Diascordium*, &c. because there is *Opium* in their composition, which makes them not so effectual for the preventing of sleep. It is more requisite to use this following, which is agreeable for dispelling the Vapours which infect the Head, and the heat about the Heart.

Take Salt of Rue, of *Scordium*, *Prunella*, of each half a scruple; Vitriolated Tartar, 8 grains; our Prophylactick Water, an ounce; Balm-water, as much as sufficeth; Syrup of Betony, an ounce: Mix them for a draught. Let

Let Sweat be thereby provoked, and let it be the care of the Attendants, that after the first or second day the Patient may be kept from sleep, if it be found that he hath strength to bear it.

There is sometimes joyned with the Feaver, *Continual Watchings, and a great pain of the Head.*

I do not use to be much concerned for these Watchings, although it should continue for the first three dayes without intermission. For it often falls out, that by the use of *Sudorifick* only, the pain is the first day abated, on the second becomes tollerable, and on the third is quite taken away.

*Opium* hath in it the Vertue of causing Sweat, and is a great Ingredient in *Treacle, Diascordium,* and *Mithridate*, which without it would not in my judgment have that *Sudorifick* quality, for which they are now noted. It is also reckoned by several Authors amongst those Medicines which are famous for dispelling of Poyson, whose use is very requisite in all malignant Feavers: nor do I believe that there can any other Medicine be named which gives so present relief to the Patient as *Opium*; concerning the Operation whereof they are able to give a better account, who have been frequent and curious in the use of it. I have sometimes in this case (though contrary to Custom) given it sparingly, when I have found the sick person not to sleep in the first, second, or third dayes: But when he hath waked for six, or seven dayes together, and found a great decay of strength, this following Prescription, taken every quarter of an hour by a spoonful, till sleep hath seized on him, hath afforded great relief, and the sleep produced thereby, hath been undisturbed, and of long continuance.

Take

Take our Prophylactick-water, an ounce and half; Borage-water, an ounce; Cinamon-water, three drams; Confection of Hyacinth, a dram; Lozanges of Sugar pearl'd, three drams; *Laudanum Opiat*, two grains: Mix them.

You may safely make use of *Opium*, after the manner before mentioned; but in Cachectick and infirm Bodies, whosoever gives it too boldly, or is fearful of prescribing it at all, discovers that he understands not its Vertue and Efficacy.

Before I come to the use of *Opiat-Ladanum*, I endeavor to ease the pain of the Head by these means following; viz. By applying Ground-Ivy bruised to the nape of the Neck; and to the soles of the Feet and palms of the Hands, this; or some such like Composition.

Take Leaves of Rue, a handful and half; foure Leaven, two ounces; Pigeons-dung, an ounce; Common Salt, half an ounce; Elder Vinegar, as much as sufficeth to make it into a Poultice, to be applyed to the soles of the Feet, and palms of the Hands.

Or,

Take Bolearmenick, seal'd Earth, common white-Chalk, of each half an ounce; Vinegar of Marigolds, as much as sufficeth: apply it as before.

To the Forehead I have often applyed the Powder of Cloves, moistened with the Spirit of Wine; for I take Vinegar to be hurtful, as are also all E-mulsions.

*Vomiting and the Hicconch* is another Symptom of the Plague. It hath been observ'd by several who have been so curious as to open Bodies which have

have died of the Plague, that *Carbuncles* have often appear'd in the Stomack, and amongst the Entrails, whose testimony is not to be rejected, since it is so agreeable both to Reason and Experience.

These ( if they are not the Cause of the Vomiting and Hiccough, may be easily removed by a spoonful of this following Preparation, taken cold every quarter of an hour.

Take Mint-water, our Prophylactick-water, of each an ounce and half; Cinnamon-water, half an ounce; Confection of Hyacinth, a dram; Salt of Coral, a scruple; Syrup of Mirtles, half an ounce: Rose Julep, half an ounce: Mix them.

By the use hereof the Vomiting is usually stay'd, especially if the Stomach be sometimes anointed with this following Oyl.

Take Oyl of Nutmegs by Expression, a dram and half; Oyl of distill'd Mace, half a dram; Oyl of Wormwood, a dram: Mix them.

In the mean while, let the sick person forbear to drink too plentifully, and as soon as the Vomit is stay'd, let him make use of some good Sudorifick.

Another Symptom of the Plague is a *great Flux*, which is usually a sign that Death approacheth: but when the sick person hath not voided meer blood, nor any thing of a bloody substance, I have sometimes found these following Prescriptions to be succesful.

Let him abstain from all things that are either acid or salt, which, except in this case, are of great use in the Plague, and likewise from drinking much: But if his thirst be so exceeding great that he cannot bear it, let him take one, two or three spoonfuls of this following mixture.

B b 4

Take



Take Tormentil Roots, an ounce; Red Roses, a handful; Shavings of Harts-horn, a dram; Seeds of Sorrel and Mirtle, of each a dram: boil them in Smiths-water, and to nine ounces of the Liquor, add of the Confection of Hyacinth, a dram; Syrup of Mirtles, an ounce: Mix them.

Many have also from Treacle alone received great benefit by swallowing a little of it every four hours, till they have taken the quantity of a drachm; as likewise from this following, taken by spoonfuls.

Take *Fracastorius* his *Diascordium*, two drams; Amber, half a scruple; red Coral prepared, Dragons-blood, of each a scruple, prepared Pearls, half a scruple; Fennel-water, an ounce; Plantane and Rose-water, of each an ounce and half; Syrup of Comfrey of *Fernelius*, an ounce: Mix them.

Clysters of an astringent, drying, and emollient quality, given twice or thrice in a day, have likewise in this case been found very necessary.

Take Roots of Comfrey the greater, an ounce; Bistort and Tormentil-roots, of each three drams; Oak-leaves, half a handful; Flowers of Balaustians, Red-Roses, of each a pugil; Aniseeds, 3 drams: boil them in Cows Milk that hath been burnt too, into 8 ounces of Liquor; dissolve of Venice-Turpentine, two drams; one yolk of an Egg, white Troches of Rhasis, a dram; Honey of Mercury, half an ounce; of Roses, an ounce: Make a Clyster.

The Bathing of the Belly with the Lees of white, or rather of red Wine, and the applying

to it afterward a warm cloth 3 or 4 times doubled, have by some been found to be of singular benefit; or else the Ointment and Plaister following may be made use of.

Take Oyl of Mastick, of exprest Nutmegs, of each a dram, Oyl of Dill, Wormwood, Mirtles, of each two drams; old Treacle, three drams: Mix them.

Take Bolcarmenick, Frankinsence, Mastick, Dragons-blood, of each two drams; Mummy three drams; Powder of Galls, a dram and half; Seeds of Carrots, Lovage, Anise, Mirtles, of each a scruple; Oyl of Nutmegs, by expression, three drams; Venice-Turpentine, as much as sufficeth to make it into a Plaister.

And thus much may suffice to have been spoken concerning the inward Symptoms of the Plague: the outward are three; the *Spots*, called *Petechia*, the *Bubo*, and the *Carbuncle*.

The *Spots* can hardly any other way be better removed than by inward Remedies, but they do usually portend some mischief.

The *Bubo*, I am wont to deal with after this manner following. At the first appearance of it, and although the swelling hath arrived to no considerable heighth, I draw a Blister, without making use of Cupping-glasses, which by reason that they cause a great deal of pain, and create a Fever, and draw unto them both the good and bad Humours, and cause a greater alteration than was before in the Blood, I do utterly lay aside: After 7 or 8 hours, cutting the Blister, I apply unto that Part a Magnetick Plaister of Arsenick: The Vertue whereof is so great that I know not any more excellent, which will appear to whomsoever shall make

make use of it ; the account of it out of *Hartman* and *Agricola* is as followeth.

*The Magnetick Arsenical Plaister.*

Take Crude Antimony, yellow Brimstone, white Arsenick, of each two ounces.

When you have beat them very small, let them be put into a Viol covered in Sand, to which you must apply fire till they are all melted, and appear to be of a dark red colour; when it is cool it may be taken out of the Vessel, and this is that which they call the *Arsenical Magnet*, and hath not in it any thing of poyson, as it may be easily experimented upon Doggs afterwards.

Take *Gum Sagapenum*, *Ammoniacum*, *Galbanum*, of the *Arsenical Magnet*, of each three drams; Turpentine of the Larch-Tree, Wax, of each half an ounce; Oyl of Amber, two drams; Dulcified Earth of Vitriol, a dram.

Let the Gums be dissolved in the strongest Wine-Vinegar, and strained through a Linnen Cloth, let them after that be boyled up to their former consistence, then melt the Wax and the Turpentine together by themselves, and when you have taken them off from the fire, stir them well till you have brought them to the consistence of an Oyntment, then add to them the Gums before mentioned, and the *Arsenical Magnet*, together with the Earth of Vitriol, and Oyl of Amber, and you will have that Plaister which is most effectual for drawing forth all sorts of Poyson.

I have found the Vertue of this Plaister to be such, that if it be applied to those parts where the  
Skin

Skin is somewhat hard, it leaves not the least sign of a Scar, &c yet doth so plentifully draw forth the Malignant Humour, that a *Bubo* of the bigness of a Walnut, will in the space of five or six days be utterly taken away; but because it doth not always so suddenly produce this Effect, it is often very necessary to raise a Blister for Evacuation of the Humours. And it is observable, that in some strong Bodies it causeth no Escar at all, unless when the Blister hath corroded, not only the outward, but also the inward Skin. But in Children, and more tender Bodies, it will of it self cause an Escar, although there be no Blister drawn before the application of it.

This Escar or Crust, is the true seat of the Venom, which is extracted, and is of that thickness (especially considering that the Skin is but superficially corroded) that it is well worth our while to consider it. For I do believe that to be the reason why it is much sooner separated than other Crusts or Scars that are caused by Art; for in the space of 24 or 36 hours, if no Scarification hath preceded, it may be easily taken off without any, or at least with a very small pain, if you make use of any Antipestilential Plaster, and add unto it some Treacle, or *Unguentum Basilicon*, or else the severing of the Escar may be very much promoted by this Oyntment.

Take Virgins-Honey, Ducks-grease, of each an ounce; Soot, six drams; Turpentine, an ounce; Yolks of two Eggs, Treacle, three drams; Oyl of Scorpions, as much as sufficeth to make it into an Oyntment.

But if the Tumour is not sufficiently abated when the first Crust is taken off by the Arsenical  
Magne-

Magnetick Plaister, it is requisite that you create a second or third, and then proceed as before.

The Ulcer may be consolidated by a Plaister of *Minium*, of White-Lead, *Diapompholigos*, or some such Remedy which dryeth up the Humour, and bringeth the Ulcer to a Cicatrice: but we must observe this by the way, that this Consolidation is not to be wrought too suddenly, lest part of the poysonous Humour which still remains in the Body, should cause some new Disease which may be fatal to the Patient.

For want of the Magnetick Plaister, you may make use of this following, if you take care, first to raise a Blister, the virtue whereof hath been found to be very great by several, for the taking away of painful *Scrophula's*, and the excellent qualities that are in it, have made it famous by the name of

#### The Divine Plaister.

Take Gum *Galbanum*, an ounce; *Ammoniacum*, two drams; *Oppoponax*, three drams; Yellow Wax, twenty ounces; Oyl of Olives, 24 ounces; Litharge of Gold, 17 ounces; *Olibanum*, two ounces; Mirrhe, Frankinsence, of each ten drams; Verdigreese, Long Birthwort, Mastick, of each an ounce; *Bdellium*, Load-stone, of each two ounces: Make it according to Art into a Plaister.

If the *Bubo* is too protuberant, or cleaves to the Tendon, a Vesicatory is too weak, but an actual Cautery is not so necessary; it will be therefore best to make use of a Potential one, and among those several wherewith I have been acquainted, I know not any one that is more corrosive,



five, and yet causeth less pain, than this following.

Take of unslacked-Lime, Dracm. 1. of black-Sope, as much as sufficeth : Mix them.

There are few which are not acquainted with such things as are useful for drawing of Blisters, among the rest, this Prescription following is to be commended.

Take sower Leaven, half an ounce ; *Euphorbium*, Seeds of Staveacre, of Mustard, Roots of Pellitory of Spain, of each a scruple and half ; *Cantharides*, a dram and half ; Strongest Wine-Vinegar to make for a Blistering Past.

If the pain be great, the following Pultrice may be made use of, unless necessity require that the Chirurgeon should make use of a Cautery.

Take Leaves of *Scordium*, Rue, Hemlock, of each a handful ; Camomile and Dill flowers of each, a pugil ; tops of Wormwood, two handfuls, crums of Bread, two ounces ; boil them in milk : adding to it of Eastern Saffron, half a dram, Yolks of two Eggs ; Treacle, three drams : Make it into a Cataplasme.

The suppuration of a *Bubo* is very rare, the means necessary for it, are such as Chirugions are very well acquainted with, and are not, if Nature inclines to it, to be neglected. The abscessus in this case is to be opened, first, by a Lancet, and not by the application of any Caustick ; but the Ulcer that proceeds from hence is very slowly healed.

None but such as are unskilful make use of the Plaister of Frogs and Mercury, for it driveth the venom inward, and threatneth much danger to the sick person, wherein we are confirmed both  
by

by the Writings of Ancient Authors, and by our own experience.

*The Carbuncle*

Called by the Greeks *Anthrax*, (for it is to no purpose to insert any nice distinction between them) shews it self in several shapes, but the Symptoms of it are many times very fallible: It is ealie to conclude of it, when ever it discovers it self by a little push of a dark purple colour with an Inflammation round about it; but often appears with a white Push without any considerable prominecy, which seems to contain a sort of purulent matter that portends no mischief, but if you squeeze it, you will find it dry and very hard, and it eats very deep into the skin underneath it.

Sometimes there appears one single Bladder filled with Limpid Matter, which if it be not opened in the space of 24 hours, it grows black, and upon its dissection sends forth two or three drops of black blood.

Otherwhiles several little white Elisters discover themselves. If these grow hard underneath, and are accompanied with a Fever and Inflammation, there is no question but that they are Malignant, and I know not why they may not be reckoned in the number of Carbuncles; especially since they are wont to dispatch a man in as short a time as the purple ones; and they are to be dealt with after the same manner, if we expect that our endeavours should succeed.

To the Cure of it, it is requisite that the Suppuration should with all diligence be promoted, and

and thereby the danger prevented of the infection dispersing it self. And for this purpose I have found nothing more effectual than an actual Cautery, which hath also been approved of by several Chirurgions; but there are some who apprehending it to be too cruel a Remedy, do upon that account reject it, and choose rather a Potential Caustick, or some Medicines whereby Blisters may be raised: Both which I my self likewise have made use of, when it hath not been allowed that we should use other means, and when I have hoped that these might be sufficiently efficacious. For a Physician is often constrained to comply with the Humour of such as are conversant about the sick person, and will pretend to know much, although it be many times to the prejudice of his Patient.

They that approve not of any of the forementioned Remedies, may make use of the Magnetical Arsenick Plaister, which in this case we have found to be of great vertue.

For the separation of the Scar, those means which we mentioned in treating of the *Bubo*, are very necessary; many have very much commended this following Pultice.

Take Roots of Comfrey the greater dried, two drams; Marshmallow-roots dried, half an ounce; Leaves of *Scordium* dried, two drams; Meal of Linseed, and Wheat, of each half an ounce; make them into fine powder, pour upon them clean water as much as is sufficient; let them boil a little, that the Mucilages may be dissolv'd, and till it comes to the consistence of a thick Pultice, then add of Honey, Turpentine, and *Ung. Apostolorum*, of each three drams; *Basilicon*, Tar, of each two drams;

*Preservatives against the Plague.*

drams ; the yolk of an Egg ; Eastern Saffron, a scruple : Mix, and if you please, you may add two drams of Treacle.

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*Preservatives against the*  
**PLAGUE.**

**I**T is the Doctrine of the Devil to teach that the use of all means is to be neglected ; who once spake to our Saviour, and endeavoured to persuade him to cast himself headlong from the top of the Temple : because they need no other security, whom God supporteth by his Mighty Hand: but he that hath given us Life, and Health, requires that we should make use of some helps for the conservation of both, and therefore if you take my advice, I would wish you to observe these Rules following.

Amongst which, in the first place is chalenged, and that deservedly, fervent *Prayer*.

Flight is very allowable to Christians, if it be consistent with their quality and condition of life ; but let those that make use of this, not depend too much upon it, but remember that it is not possible to fly beyond the reach of the Omnipotent

And to take these Directions with them, viz. That they fly early, go far off, and be slack in their return.

When we go out into the Air, either by day  
or

or night, we ought to take special care that it be clear and free from Vapours.

To which intent it hath been in such cases very usual, and found exceedingly adventagious to keep good fires both in publick and private, since the Air is by nothing sooner, nor more effectually purified.

It is also very necessary that the Houses be daily washed, which if it be done with Vinegar instead of Water, it is much better.

Things of a strong Odour, such as *Amber*, *Musk*, *Civet*, *Benjamin*, &c. do not only correct the Malignity, but attract the Venom to them, and have been found hurtful by experience, and are therefore consequently to be concluded so by reason.

It is useles and ridiculous to anoint the nostrils with *Treacle* and *Mithridate*.

Those things which do really purifie the Air, are *Amber*, *Fitch*, *Mirre*, *Frankinsence*, the Wood and the Berries of *Juniper*, *Sulphur*, *Assa Fatida*, *Horn* ( but especially *Gunpowder* ) being either kindled, or put upon a few lighted Coals.

Such as take Tobacco, do very much commend the virtue of that Plant; I do not disapprove the use of it, though as much as I can, I avoid the smoak.

An inordinate Diet is very hurtful at all seasons, but especially in a Pestilential one. There can be nothing prescribed in general which may agree with each man in particular; there is very much to be allowed to custom, but we must at such times industriously avoid all Meats that are difficult to be concocted, and take great care that the Stomach be not overcharged.



For our Diet ( *if we can so contrive it* ) we ought to make choice of Veal, Mutton, Beef, Pullets, Capons, Peacocks, Larks, Chaffinches, Quails, Hares, Coneys, &c. Perch, Pike, Whiting, Sole, Salmon, &c. Eggs, Butter, Green and Parmachesse, Buttermilk; Cichory, Endive, Sorrel, Lettuce, Chervil, Parsley, Rosemary, sharp Apples, Quinces, Lemmons, Oranges, Capers, &c.

On the other side, Flesh and Fish which hath been dryed and salted, are very hurtful; as Bacon and Pork, Haddocks, Eels, Crabs, Shrimps, green Fruit, and all things that are hard of Digestion.

Walnuts are very much commended, and not without good Reason, for there may be very much use made of them: The green ones preserved, do much good to those that abound with Choler: But such as are come to their full ripeness, whether you take them fresh gathered, or when they are more dryed, all that make use of them, will tell you that they are very pernicious.

The strongest Beer, and Wine of a middle strength, are very useful at such times, if moderately taken; but we cannot allow that any, except such as are very ancient, should daily make use of strong and sweet Wines, nor of Spirit of Wine and Brandy.

Go not forth into the Air with an empty Stomach, but alwayes take some preservative against Infection.

Take our Prophylactick Water, six ounces; Julep of Roses, three ounces: Mix them: take the quantity of a spoonful or two each morning.

Or,

Or,

Take our Prophylactick Conserve, three ounces; take the quantity of a Chestnut in the morning, or as often as you are to go to an infected place.

Vinegar, and all sharp things, have been commended to us by long experience; but they will not well agree with such as are troubled with a Cough, weakness of Stomach, or the Cholick, if they are taken either alone, or in too great a quantity.

I never had any great esteem for outward means, but those that can fancy it, many wear about their neck this Amulet.

Take Arsenical Magnet, a dram; Benzoes, as much as is sufficient: Make them into great rows, and sow them up in red Lawn.

We have before described the Arsenical Magnet when we treated of the Bubo.

Sleep and Watching, Exercise of the Body, and the use of Women, if immoderate, are very hurtful.

Costiveness is prejudicial, but not so much as a great looseness.

Sadness, fear, and anger will make very strange alterations in the Blood; he who knows how to moderate those passions is most prudent.

## Practical Observations.

### I.

A Young Man aged twenty two years, being lately returned from the *East Indies*, on the 21 of *July*, 1655. in the Evening was suddenly taken with a great pain in his Head, and a shivering through his whole Body, having that day received much injury from the Water and Air; the day following he became exceedingly delirious, so that he could not by four men be kept in his bed.

The *Plague* at that time raged very much in the next Town, which was very populous; but there had as yet appeared no Symptoms of it in this of ours: We met with no outward signs of any Malignity, nor did those within appear so considerable, as to forbid the breathing of a Vein, which the *Delirium* did very much press us upon: I therefore prescribed a Cordial mixture, which might also be *Sudorifick*, whereof two spoonfuls was to be taken each quarter of an hour, and after the space of one hour a Vein to be opened in the right Arm, and seven ounces of Blood to be taken from thence: I had more than once before made tryal of this mixture in a *Pleurisie*, which was accompanied with Spots; The description of it is as followeth.

Take Waters of Burrage, Holy-Thistle, Bawm,  
of

of each an ounce; Alexipharmick Water, an ounce and half; Cinamon-water, half an ounce; Confection of Alkermes without Amber-greece and Musk, a dram and half; Syrup of the juice of Citrons, an ounce: Mix them.

The mixture was taken, and a Vein opened, and such things as we thought fitting applied to the Temples, the Neck, and the Soles of the Feet; but all was not sufficient to overcome the Malignity of the Disease; for he dyed that night.

II.

A Man and his Wife on the 5th of July, were both taken with *Buboes* in their Groin; She was very drowsie, Feaverish, and Anxious, but by the use of *Sudorificks* and drawing Plaisters; she was by the 10th day following restored to perfect health. He was seized on by a pain in the Head, and a small *Delirium* which continued till the 5th day, on which he was taken with a great fit of Bleeding, which with some intermission continued for two days; this according to the Opinion of all Practicall Phylicians was to be judged very dangerous. But when I considered that his strength was not at all hereby impaired, but on the other side, the pain in the Head and the Feaver abated, nor did the *Bubo* strike inward; I cast away fear, and concluded that the Judgments of men by time and experience might be much corrected. I therefore thought it not the best course to continue here the use of *Sudorificks*, but rather to strengthen the Heart, and to incrassate the Blood, and thereby to stop the Flux of it. To which purpose I prescribed this which followeth, to be taken by a spoonful at a time.

Take Water of Roses and Plantane, of each four ounces; Cinamon-water, six drams; Dragons-blood, red Corral prepared, of each a scruple; Confection of Hyacinth, a dram; Spirit of Salt, eight drops; Syrup of Barberries, an ounce and half: Mix them.

Upon the taking of this, the *Bleeding* and the *Delirium* both ceased, and thereupon the Patient grew well, the *Bubo* continuing for ten weeks after.

### III.

A Maid on the 4th of September was taken with a *Feaver*, a pain at the Heart, and in the Head, and with a *Bubo*, which broke out about the inward part of the bending of the left Arm, and seized on the Tendon of the Muscle *Biceps*: From hence proceeded a very acute pain, not only in that part where the *Bubo* appeared, but also about the Arm-pits by consent of parts, although there was no swelling, which thereabouts appeared. I gave her this *Sudorifick* forthwith.

Take *Diafcoidium* of *Fracastorius*, four scruples; *Sal Prunella*, a scruple; Alexipharmick-water, an ounce and half; and Holy-Thistle-water as much as is sufficient; Syrup of Lemons, half an ounce: Mix it for a draught.

To the *Bubo* I applied the *Divine Plaster*.

The sweat came plentifully, but the pain of her Arm, a *Delirium* and continual watchings, after the use of several other things forced us to use this *Laudanum Opiat*.

Take Bawm-water, an ounce; Holy-Thistle-water, an ounce and half; Alexipharmick-water, an ounce; Confection of Hyacinth, a dram; Julep of Roses, ten drams; *Laudanum opiat*, two grains: Mix them.

Of



Of this she took every half hour one or two Spoonfuls; and although it caused sweat, yet it procured no sleep. The Chirurgion for variety made use of his *Pestilential Plaster*, but neither was the pain hereby remitted, we were therefore forced at length to apply this following to break it.

Take of unslacked Lime, of Black-Sope, as much as sufficeth.

By the help whereof the *Fever* very much abated, though the pain continued as before, but yet in the space of ten or twelve days it utterly left her; but the *Bubo* remained open for six weeks after, for the whole Glandule was consumed by the Ulcer, and some part of it which was corrupted, was necessarily to be separated from the other. In the mean while we had great cause to fear that the putrifaction had pierced deeper, because the Ulcer was deep, and the sides of it callous, and a serous matter came from it; but by the blessing of God the Cure succeeded according to our wish.

#### IV.

A Bookseller in *May* was very much troubled with two Boyles, whereof one broke out on his Buttock, the other on the *Scrotum*. To remove the Cause hereof, and to abate the Tumour, I prescribed this following Laxative Apozem to be taken 2 or 3. dayes together.

Take Tamarinds, an ounce; Cream of Tartar, two drams; Senna, six drams; Rhubarb, two drams and an half; Aniseeds, a dram and half; boyl them in whay, and to a pint of the strained Liquor, add two ounces of Syrup of Succory with Rhubarb: Make it into an Apozem.

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To

To the swelling I applyed the Plaister *Diachylon* with Gums, by the means whereof they were wholly removed.

The same person the 26th of *August* (at which time the *Plague* raged here very much) was taken with a *Bubo* in his Groin, which, when after inquisition made, (that I might satisfie the curiosity of Him and his Wife) I had declared to be *Pestilential*, it was strange to see what terrour seized upon them both, but I quickly caused them to chear up again, by letting them know that the life was not at all in danger; for the Man in all other respects was very well, he eat, drank, and slept well, had no Feaver, nor pain at his Heart; nevertheless I gave him *Sudorificks* more than once, and the Chirurgeon drew a Blister, and afterwards applyed Plaisters and drawing Pultises, whereby in the space of four weeks the *Bubo* was wholly dissipated without any Suppuration.

## V.

A young Emdener of twenty six years old, on the 12th of *August* fell into a continual Feaver, accompanied with drowlines, trembling of the Lips, blackness, and dryness of the Tongue, all Malignant signs, but restored him again by the 30th of the the same Moneth; to effect which, I prescribed him a *Sudorifick*, Morning, and Evening, and for his ordinary Drink, this Julep.

Take Holy-Thistle-water, a pint; Alexipharmick-water, two ounces; Julep of Roses, 2 ounces and half; Spirit of Salt, eight drops: Mix them.

On the third day there was Spots discovered all over his Body, nor was his drowlines or the trembling of his Lips abated, but he vomited not at all. I gave him this *Sudorifick*.

Take

Take Salt of *Scordium*, of Holy-Thistle, of each a scruple; Antimony, Diaphoretick, half a scruple; Crabs-eyes bruised, twelve grins; Our Prophylactick-water, Mint-water, and Syrup of the juice of Holy-Thistle, of each an ounce; Mix it for a draught.

By the use hereof the Feaver abated very much, and on the eighth day I found that he had a Thrush, for the separation whereof, I prescribed this Mixture to be taken by spoonfuls.

Take the juice of the greater Houfleeck, half an ounce, Water of Self-heal, of Purslane, of each an ounce and half; the yolk of one Egg, Syrup of Violets compound, six drms: Mix them.

This being twice or thrice reiterated, and making use at the same time of a Lohoch of the Syrups of Purslain and Violets, by means hereof the Thrush was removed, and the Feaver cured without either Purgings or letting Blood.

VI.

I was sent for on the 18th of *August* to a Woman great with child, which was taken with a great drowsiness, and had a Pestilential *Bubo* brake forth in her Groin, but she had scarcely any Feaver; her Eyes look'd well, and her Tongue was moist, and she seem'd very heart-whole, she had now gone seven moneths, and on the night following she was delivered, which I concluded to be a certain sign of Death, and found it true, for on the next day about ten of the Clock she departed.

The Husband of this Woman fell sick the same day, he was Delirious, his Eyes sparkled, his Tongue was dry, all which I noted for very ill signs,

signs, his Feaver was but small, but the pain at his Heart very great, his Urine like that of Men well in health. After having taken two Sudorificks, he began to come to himself, his Tongue was observed to be moist, and a *Bubo* appeared in his Groin, and a Carbuncle on his Back, which on the next day had three or four more joyned to it. These Symptoms promised good success, but it happened otherwise, for as soon as he saw his Wife dead, he was so altered, that the *Bubo* striking inward, and the sweat stopping, the third day after he dyed.

An old Woman related to him had a Carbuncle without a Feaver, and by our usual way of proceeding, was cured in nine days.

## VII.

A Midwife which went trembling and unsteady, gave me occasion from thence to suspect some extraordinary weakness in her, or a Delirium; nor was I mistaken, for when I came to feel how languidly her Pulse beat, I found it evident, but yet I could discover no outward Symptom, nevertheless the dryness of the Tongue, the difficulty of Breathing, and such other signs did discover that some Malignity was concealed within; at length upon enquiry, she told us that she had a Pust upon her right Thigh, which upon search we found to be a Carbuncle of the breadth of a shilling. She would not grant that she had any *Bubo* in her Groin (which nevertheless I doubted not of) nor suffer the Chirurgeon to search. He gave her what was requisite to be applyed outwardly, and I prescribed her a Sudorifick; after two days she recovered her strength, and became

came of a right mind, and the third day seemed to be perfectly well ; but on the Evening of that day all was changed, she became restless and almost distracted, and dyed that night,

She had taken before I was sent for, *Manna* with *Cream of Tartar*, & after that *Tamarinds*, all which doing no good, but the Disease still increasing upon her, she conjecturing that there was some Malignity in it, took an ounce of *Plague-water*, which, though it were much weaker than the Malignity required, yet she took it for two days by my advice, but on the third ( whatsoever I perswaded to the contrary ) she changed all her Linnen, even to her Head-clothes, and drank Whey in which *Tamarinds* had been boiled, from whence proceeded her sudden change for the worse, and upon that her death ; and these are the effects of self-conceitedness.

VIII.

*Helena van Wyngaerden* a servant of mine, on the first day had some slight Symptoms of the Disease, the next she was taken with Vomiting, a pain in the Head, and at her Heart, especially when she endeavoured to rise from her Bed, her Eyes look'd red, but her Tongue was well enough, and her Feaver was but small : a few days before, without my knowledge, she had been at an house that was visited : I gave her presently a *Sudorifick*, whereupon the third day after a *Bubo* appeared on the left side of her Groin ; I continued the use of *Sudorificks*, and the Chirurgeon took care of the *Bubo*, by which means, within a fortnight she perfectly recovered, and went again about her business.

IX.



## IX.

The Daughter of N. Damer, on the second of September, complained of a great pain in her Head, and at her Heart, and her Tongue grew black and dry. The first and second day we put her into a sweat, and on the third she told us that she was perfectly well; her Tongue became moist, her pain, her Fever and anxiety left her; nevertheless I perswaded her to continue the *Sudorifics*, but she arose and ate and drank, went abroad, and after that slept well all night, but in the morning the former Symptoms returned, and in the evening of the same day there appeared Spots, and the next morning she dyed.

## X.

N. N. Had lain very ill for six days, at what time I was sent for to him on the twentieth of August, he began to be light-headed, his Tongue became black and dry, and he had a great anxiety at his Heart, his Eyes were fix'd, his Hands trembled, and a great Carbuncle discovered itself on his Cheek, whose Tail reached to his very Chin, which was also hard and much swelled. It seem'd to threaten a much greater increase, for it was very dry and much inflamed, and not circumscribed within any bounds. To this was added a pain in the Throat (which Symptom I conjectured to be mortal) and a very intense Fever. This desperate case put us in mind of desperate Remedies; wherefore being guided by my own Reason and Experience, and perswaded

ded by the Authority of the most Eminent Physicians, both Antient and Modern; I boldly recommended to him an actual Cautery, which was presently applyed by the Chirurgion, without any great pain to the Patient; This Operation was perform'd in the Morning at ten of the Clock, and between four and five in the afternoon it appear'd purulent, and the Crust began to be separated, nor did the Core of it creep any further, all which Effects I know not from what means they could have been expected besides this. In the meanwhile he sweat plentifully, and all things gave his friends to hope that he would again recover; but I was of another mind, as knowing very well the nature of this treacherous Disease. The same evening he took another *Sudorifick*, and slept quietly enough all night. On the one and twentieth day the Cheek that was affected discovered on it some moisture, the Fever continued as it was: Between his forefinger and the middle one there brake out a very painful Carbuncle which affected the whole Arm. To this there was applyed another actual Cautery without any great alteration discerned in the Patient; then we prescribed him a Julep which might cause sweat, and some food that was nourishing, but no sweat appear'd, and the affected places being dryer than the rest, foreboded an ill event. At nine in the morning another Chirurgion was sent for, who approved of whatsoever we had done in this case, at midnight he fell into an high *Delirium*, so that he could not be held in his bed by those which attended; about morning he betook himself to rest, and in one hour after departed: some of his friends accused me of being negligent, which

which ingratitude I can the better bear, since I am conscious to my self, and give thanks to God for it, that I omitted nothing which the Rules of Art required to be done.

## XI.

The Wife of *Cornelius Janson* being fifty years old, was after she had been sick two days, troubled with a *Bubo* in her Groin, and a great anxiety of Heart, but the Feaver was but small: Her Eyes (which I do much observe in all sick persons) look'd very well; as soon as she sweat she began to confess her self better, her anxiety was presently removed, and her Feaver also after few days: The *Bubo* (a Blister being first drawn) was dressed by a Chirurgion with the *Maguetical Arsenick Plaister*: She fell sick on the eighteenth of *September*, and her son on the twenty third, who was taken with a pain in his Head, and refusing all Medicines, dyed within three dayes, but she recovered.

## XII.

*Everard Tessalear* a Vintner was taken on the 28th of *September* with a chilnefs all over him, and then with a very great heat, his anxiety was great, and his breathing difficult, accompanied with nauitiating, a pain in the Head, a trembling of the hands, a burning of the Eyes, and an intolerable pain on the right side of the Groin, yet without any apparent swelling. I gave in my Opinion that he was taken with a Pestilential Feaver, and prescribed some Remedies for that purpose; after the first Sudorifick, the pain in the

the Head and Groin abated, and the Vomiting was stopped; after the second, the pain became tolerable, and by the fourth, it was wholly taken away, and the Feaver cured: Being so suddenly restored, he believed not that there was any Malignity in it, and went abroad forthwith, which I did very much disallow, accusing him of unthankfulness to God, and foretelling that he was to suffer somewhat more severe, because I could easily perceive his health and strength not to be confirmed, and that there was need of a further course of Physick to settle it. He still refused to hearken to me, till on the day following he was attacked by the same Enemy, and his Wife also; he first complained of a pain in his Groin, and then of a *Bubo*, which Symptoms confirmed the truth of what I had foretold, and caused him to repent when it was too late: The fear of Death made him now desirous of repeating the *Sudorifics*, by means whereof, through the Divine assistance they were both cured in nine days, though the *Bubo* continued on the Woman for a Moneth after.

## XIII.

*Albert N.* on the second of *October* was taken with a great pain at the Heart, his Pulse was not to be discerned by a gentle touch, his Countenance was like one in an Agony, he was extream prone to Vomit and to sleep; but he was pretty well in his Senses, his Eyes were not inflamed, his Tongue moist, the Feaver but small, and the thirst not great: The Vomiting was presently relieved by the use of those things

things which we have mentioned in their proper place; but the sweat came but slowly: whereupon I gave him the next day a more powerful *Sudorifick*, whereof we found very notable effects, but his thirst by that means being increased, made him drink a great quantity of Beer, whereby the Vomiting returned, and because he complain'd of a pain in his Belly, we were afraid of a *Diarrhea*, wherefore instead of Beer, we gave him this following Mixture by Spoonfulls.

Take Rosewater, two ounces; Holy-Thistle-water, four ounces; Mint-Water, an ounce; Cinamon-water, three drams; our Prophylactick Water, an ounce and half; Syrup of Mertles, two ounces: Mix them.

And in the Evening he took this *Sudorifick*.

Take Confection of Hyacinth, a scruple; Treacle, *Diascordium*, of each two scruples; Salt of Coral, fifteen grains; our Prophylactick Water, ten drams: Mix it for a draught.

The night after passed quietly, the Vomiting ceased; the third day after there was a Carbuncle discovered on the inside of the left Nostril; we apply'd to it our Divine Plaster, and inwardly we gave *Sudorificks*, and such things as might refrigerate; on the fourth day his Nose was observed to be cold, and to look of a Purple colour, the Carbuncle extending it self to the *Processus Mammi Formis*: The Pulse beat low and unequal, nevertheless he took another *Sudorifick*, but without success, for about noon many mortal signs discovered themselves, and  
although



although he was all along of a sound mind, yet after two hours he departed:

XIV.

The Wife of John N. Chirurgion, in September, was suddenly taken with a Feaver, with drowfiness and anxiety of heart. I prescrib'd this Sudorifick.

Take *Diascordium* of *Fracastorius*, a dram; Confection of Hyacinth, *Lapis Prunellæ*, Salt of *Scordium*, of each a scruple; our Prophylactick Water, an ounce; Betony-water, as much as sufficeth, Syrup, of the juice of Holy-thistle, half an ounce; Mix it for a draught.

It produc'd no sweat, which was an ill Omen: The next day therefore she took this, which is somewhat stronger.

Take Treacle, *Diascordium*, of each a dram and half; Our Prophylactick Water, an ounce and half; Salt, of Holy-Thistle, a scruple; Syrup of Lemmons, six drams: Mix it for a Potion.

And this also effected nothing: For variety sake in the Evening, I gave her this following.

Take Salt of Wormwood, *Scordium*, *Prunella*, Antimony, Diaphoretick, of each a scruple; Syrup of the juice of Holy-Thistle, an ounce; Our Prophylactick Water two ounces: Mix it for a draught.

By the help whereof she began to Sweat, and the Feaver to abate together with the anxiety: but the third day after the Spots appear'd, which carried her off immediately.

Her Husband, after eight days, beginning to visit his Patients again, came about eight in the morning to one that was sick, when sitting down

On a Stool, he was suddenly so taken, that he could not rise again; about noon, by the help of his Son and his Man, he went home, where taking his Bed, he was presently seized with a great drowsiness, which I call'd a *Coma*, because whatever I did or said to him, I could not get two words from him; I presently prescribed him a Clyster, and this Oyntment for his Head.

Take Oyl of Marjoram, a scruple; Oyl of Rhee, a dram; of Amber rectified, a Scruple; Rose-mary, half a scruple: Mix them.

I advised also that they should endeavour to make him sneeze by putting Tobacco to his Nose, and give him inwardly some of this Mixture.

Take Antiepileptick Water, of our Prophylactic Water, of Betony, and Rose-water, Symplos *Stachas*, of each an ounce.

The Clyster came from him without any effect, and Tobacco did no good: he took a little of the mixture; and about Evening I prescribed him another Clyster, and this sneezing Powder following was blown up his Nostrils with a Quill.

Take the flower of Lillies of the Valley, Leaves of Marjoram, of each half a scruple; White-Hellebore, three grains: Make them into fine Powder.

By the help hereof he sneezed 3 or 4 times, and a purulent matter came from him at his Mouth, but a great quantity of it went down his Throat, besides which there remained a great deal of it in his Mouth, which we could easily squeeze forth by pressing his Cheeks. These were sufficient signs of an *Abscessus* in the Brain, and consequently of certain Death, especially when we could not perceive that his senses return'd to him

him, nor that he was any other way reliev'd, but on the contrary, his Voice quite fail'd him, and he began to rattle in the Throat; nor was I deceived in my conjecture, for in a short space he dyed.

Four of his Children, and a Maid-servant followed him; his Man was cured of a Bubo under his Arm-pit by drawing a Blyster, and by applying some drawing Medicines. His eldest Daughter and youngest Son still survived: He had a Fever, but was not very sick, but she was handled more severely: She had a Thrush appeared on the 8th day; which took off not only the Fever, but the whole Disease; and thus of ten in Family, but three escaped: You have here had an account of the true Signs and Effects of the Malignity, which none but such are possess'd with the Spirit of contradiction can deny to be Contagious.

Dd 2

POST

# POST-SCRIPT.

**I** Intended to have published at least fourty of these Observations, but being taken up with giving an account of other things which will conduce very much to the illustrating of our Art (which in their due time may be made publick) I could make no further progress in this: Make use of these for the benefit of your Friends, and, if you desire to see them, put us in mind of the other.

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*Nicholas Mercators's* Tables of Logarithms,  
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An Essay about the Origine and Virtues of Gems,  
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